

Vol. X. No. 4

APRIL, 1907

AUTOMOBILE MAGAZINE

Published by THE AUTOMOBILE PRESS
ANGUS SINCLAIR, Editor
136 Liberty Street, New York



MONTHLY

Price, 10 Cents

Motor Cars, Illustrated

EXHIBITIONS DESCRIBED

Popular Engineering

SPECIAL INFORMATION BUREAU

European News and Comments

GARAGE NOTES, &c.

TEN CENTS



Of 62
Contest-
ants
in the
Glidden
Tour,
38 Used
The
Auto-
Meter.
Nearly
2-3

How Far Can You READ this?

Hold It Away From You and See

It's the scale of The Warner Auto-Meter, actual size. It says your Automobile is traveling 4 miles an hour. It is as steady on your car as it is in your hand—for the scale of

The Warner Auto-Meter

is not influenced by the jar of the car—speed alone moves it. It doesn't bob around, the way other indicators do, until you are not certain whether it says 5 miles or 15.

Let us tell you more about this wonderful instrument—how it's made with sapphire jewels like a watch, yet is so strongly built that it takes an axe or a bad collision to break it or render it inaccurate, and how we use magnetism (in the only practical way), which makes The Auto-Meter as reliable as a mariner's compass forever.

Let us prove to you the good reasons why our Guarantee of The Auto-Meter is more liberal than any other manufacturer of speed and distance indicators dares to make.

Write us The Model or Power of your car and we will send you full information about The Auto-Meter with price ready to install on the dashboard.

THE WARNER INSTRUMENT CO., 562 Roosevelt St., Beloit, Wis.
The Auto-Meter is sold by all Dealers and at the Best Garages

A Dozen Pointed Truths Regarding the

Aerocar

\$2,000



Model "D"

TRUTH 1—It is a long, rakish appearing car, not too small nor too large. It is low of build, giving great stability in action.

TRUTH 2—The best of materials are used in each part. You do not become a tester when you buy an Aerocar.

TRUTH 3—Accuracy in every detail of construction makes it a perfectly balanced, quiet, smooth running car.

TRUTH 4—The four-cylinder, air-cooled, 20 horsepower motor works right on, furnishing an abundance of power, summer or winter.

TRUTH 5—Every pound of motor power is transmitted to the rear wheels. The multiple disc clutch and the horizontal shaft absorb but little.

TRUTH 6—The finish and upholstery of the Aerocar is exceedingly fine and durable. You can justly be proud of your possession.

TRUTH 7—It will carry four persons with delightful comfort. Just the average number, with an abundance of room for all.

TRUTH 8—It is a rich man's car at a poor man's price. The greatest value in the 1907 market.

TRUTH 9—It is easy to understand. There are few parts. Every movement in the operation is the most natural.

TRUTH 10—It is extremely economical, winning many honors last season. The cost of maintenance is small—you can care for your own car.

TRUTH 11—You can run it daily—including Sundays—the year around. For touring, business or pleasure you can always depend upon this machine. It is "Built for Service."

TRUTH 12—You, Mr. Naught Seven Motorist, will be one of the smiling—not swearing—kind, if you buy one of these handsome Touring Cars.

If you want a Touring Runabout—we have it. If it's a big water cooled Touring Car you desire—see ours. Be sure and find our exhibit at Chicago and Detroit Shows.

THE AEROCAR CO.,
DETROIT, MICHIGAN, U.S.A.

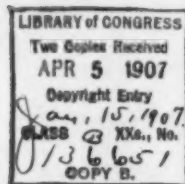
Member A.M.C.M.A.

P

of
th

jus
ces
mot
helo
duc





Vol. X. No. 4.

APRIL, 1907

AUTOMOBILE MAGAZINE

Published by THE AUTOMOBILE PRESS
136 Liberty Street, New York

Price 10 Cents

Fifth Annual Automobile Show at Boston

Mechanics' Building was the center of attraction in Boston during the week that closed on March 16, and it can be

setting, in picturesqueness of grouping, and in the extent of the mechanical display the Boston show was in some respects superior to anything ever seen on this side of the Atlantic. While the

pantomime. The great building resembled a vast garden in the glow and glory of June. Orchard trees robed in the splendor of springtime blossomed into beauty everywhere. At night the



INTERIOR VIEW OF THE BOSTON AUTOMOBILE AND POWER BOAT SHOW.

justly said that one of the most successful exhibitions of automobiles and motor boats and their accessories ever held in America was successfully conducted during the week. In beauty of

decorative scheme was on a less colossal plan than that of the recent show in New York, it was infinitely richer. The floral decorations had all the gorgeousness of a scene in an English Christmas

effect was wonderful, the myriad lights kindling the flower-wreathed walls into beaded brilliance that flamed into crosses and crescents or flashed into starry fire.

Nestling among the trees were the automobiles, resplendant in the perfection of engineering skill. Gasolene, steam and electric cars of the latest and best manufacture were shown. They seemed to be all there and in their best style. The fineness of the upholstery was the theme of universal admiration. Nothing quite so rich, or at least in such profusion, had ever been seen anywhere. The singular gracefulness of the outlines of the bodies seemed peculiarly suited to the rich and elegant accoutrements, and it was delightful to see that many of the cars were set off by the presence of fine ladies, whose fair forms, moulded in the perfection of womanly beauty and exquisitely draped in rich garments, seemed like the perfection of nature and art at their best and brightest.

Along the main floor of the building, which was carpeted in green and divided by green railings, aisles ran at right angles, so that the spectators

vantage of the shining hours of the bright March week that closed with evidences of a great and growing popularity in the use of the motor car, and with increased interest in the minds of an appreciative public.

The Parson's Motor Car

"One don't need to be no churchgoer to 'ave 'eard of the Reverend Tunicle in this town. He's wot they calls 'strenuous,' and till lately you couldn't hardly pick up the local paper without seeing in print some think about wot a fine parsing 'ee was, strenuous in everythink from three sermons a Sunday to caffy chantings an' jumble sales. He may have writ it 'imself, but anyway it was fine reading.

"Then 'one day someone calling 'imself Churchman (our guvner, 'twixt you and me) writes a letter to the paper and says wot a pity the Reverend Tunicle 'adn't no motor car to go and see 'is parishioners in—he could do treble shift on 'em that way.

'Regrettable incident, very,' an' merely sighs; with the third 'ee only says, 'Ow lucky I insured.' Then, sir, I knowed 'ee'd got it bad, that there motor mania you reads about but never sees. An' the next week 'ee 'as another boy, an' 'twas all we could do to keep 'im from suing the boy for spoiling 'is paint work, an' the insurance agent 'ee nearly goes an' drowns 'imself from grief. An' the next week again—beleeve me, sir, I'm telling you the gospel truth—'ee 'as an old woman by skidding into a public 'ouse, an' he only laughs an' says motor cars are an implement of Fate against the drink traffic. 'Twas about then 'is parishioners first took to 'eavin' things at 'is car.

"But, bless you, 'ee didn't care, sir; 'ee only said 'ee was like Fox's 'Book of Martyrs,' an' persuaded the old lady to get 'im a coorate.

"An' then 'ee offers to swop pulpits with all the country parsings a 'undred miles orf, an' 'ee motes to 'em every Sunday, preaching the same old serming about not letting the Church be cut out in motorin' by General Booth, an' a wicked man bein' like a car with leaks in the 'igh tension wires. Beleeve me, sir, it was over the 'eds of 'is 'earers. An' nine times these last nine Sundays 'ave I 'ad to go out and 'aul 'im out of ditches 'ee's gone into from turning corners too fast. An' now if 'ee runs anyone over 'ee only tells 'em not to worry as 'ee'll do the burial service on 'em for nothink. An' yesterday, 'ee'—

But a mild looking little parson came in and the foreman of the machine shop shut his jaws like a steel trap.—F. T. JANE, in *The Car*, London.



THE EMPIRE WOMEN'S ORCHESTRA AT THE BOSTON AUTOMOBILE AND POWER BOAT SHOW.

could view the exhibits from every side. The thronging thousands never seemed to weary of the wonderful spectacle, and the attendance was beyond the most sanguine expectations of the promoters. It was fortunate that the neighboring Horticultural Hall was also engaged to contain the vast overflow of exhibits that could not possibly be accommodated in the Mechanics' Building. The motor boats found special accommodation in the basement of the Horticultural Hall, and seemed almost to rival in interest the automobile departments.

It may be added that the streets for a considerable distance around presented a spectacle that was really a show in itself. This is becoming an attractive feature of these exhibitions, and the busy salesmen and expert demonstrators were not slow in taking ad-

"Our guvner, in course, merely 'ad a permiscuous advertisement for motoring in his eye; but wot does some old lady do but up an' say she'll find the money if someone honist will advise about the car. An' then our guvner, 'ee writes in 'is own name an' says as 'ow in aid of religion 'ee'll let 'er 'ave a car for the parsing at two-thirds proper price. Which 'ee did; by selling 'er an old 7-horse Panhard for fifty pound more than 'ee ever 'oped to see for it!

"The Reverend Tunicle, 'ee got 'is car an' I taught 'im to drive for as much tip as I ever expected to see from a parsing. An' 'ee driv, sir, that 'ee did. Three boys in 'is parish in one week, sir; all took to the 'orspital, too. With the first 'ee took on somethink orful, an' said 'ee 'ad the brand of Cain on 'is brow, though the boy was only shook up like and the only one to blame. With the second 'ee says,

The dates for Denver's annual automobile show have just been announced. They are Thursday, Friday and Saturday, April 11, 12 and 13. The exhibition will be held, as usual, at Coliseum Hall, which will be especially decorated for the occasion. The dealers are already enthusiastic concerning the prospects for a record-breaking show. Practically every make of car having Western agents will have his product well represented at the show.

A Scot "worthy" known as Hawkie, who combines the professions of beggar and itinerant preacher, operated in the highways and byways of Glasgow some years ago. He had a great hatred of the Irish, and declared that those people were crowding so much into Glasgow that the honest natives were deprived of the use of their own gallowes.

An excellent peculiarity of THE AUTOMOBILE MAGAZINE is that it is read. Very few copies of this publication are seen lying about in the wrappers unopened.

A Great Motor Car Feat

By M. WORTH COLWELL.

Automobiles have done some great stunts, but one of the most amazing performances in the way of touring was that of Jed Newkirk, a well known automobilist, and H. T. Kutzkau, a Western mine owner, who, with a party in two S. & M. Simplex cars, recently made a really marvelous trip of several hundred miles through desert, swamp, borax beds and generally abominable roadless country between Tonopah, Nev., Goldfield and Death Valley.

Some months ago Mr. Newkirk came East and investigated many makes of cars thoroughly, but not until he had tried out an S. & M. Simplex car for a week around New York City was he at all satisfied that a motor car could stand the sort of country that Nevada is made of. An order for two 35-40 h. p. Simplex cars was placed with Smith & Mabley and machines, some weeks later, were shipped to Tonopah.

Upon their arrival in the West they were given an ordinary trial, and then a party of ten started to put the cars through a test that all other machines had failed to do. On January 9 a trip was made from Tonopah to Goldfield, a distance of thirty miles, through a three-day fall of snow. The distance was covered in an hour and a half by the two Simplex cars, while two other automobiles that followed in their tracks took five hours.

After warming up at Goldfield for an hour the party started for Beatty, seventy-one miles distant. Just before passing through Baton they were obliged to ford a creek, and to pass through some remarkably frozen country. At eight o'clock that evening both cars arrived in Beatty, where the night was spent.

The following morning they started across Ash Meadow, which is sixteen miles of swamp, and the very worst quality of swamp at that. It was not frozen, and to make things worse the rain poured in torrents, causing the wheels of the machine to sink in the ooze up to the hubs. The powerful suction of the marsh did considerable to retard progress. After reaching Longstreets' Ranch, where the party partially "dried out," a start was made next morning for Greenwater. On the way it was necessary to ford the Amagoshia River, which has an exceptionally strong current and is about 150 feet wide and 3 feet deep. In fording, the water nearly drowned the motor, short circuiting the magneto. The distance of twenty-four miles to Greenwater was covered in three hours.

That afternoon they were joined by a prospector who wanted to go and show them a claim he had marked out in Death Valley, in the Funeral Mountains. While this was only fourteen miles distant, it

was necessary to travel 90 miles over and around the mountains. There are absolutely no roads in this part of the world, owing to the numerous cloud-bursts which make them impracticable. Upon arriving at Death Valley, and passing 'Scotty's' mine, the Amagoshia River had to be forded once more, and the destination was reached in a little over ten hours.

In returning to Tonopah the party tried taking the crossing of about six miles of borax beds and a rocky combination of salt and borax, brutally rough, and as hard as steel. Speaking of this stretch, Mr. Newkirk said: "It has never been crossed by a vehicle before; nothing but burros ever having attempted it. It is 200 feet below sea level and so intensely hot with vapor arising that the eyes cannot see a mile in any direction."

The rest of the journey was made through the Furnace Creek Ranch of Smith, of "twenty-mule team borax" fame, over mountains 5,600 feet above sea level, through surfaceless roads that native miners claimed were unnegotiable,

Requirements of the Modern Chauffeur

Did you ever consider what is required of the modern chauffeur? When automobiles first came out a good-looking ex-coachman, with a little mechanical ability, a neat-fitting coat and clean-shaven face, filled the bill. That was when automobiles were operated at slow speed. There were not many machines in use. The situation has changed very decidedly in the past few years, until at the present time there are a number of established training institutions in which chauffeurs are given the needed experience in handling machines. A crude man can be taken in hand in these places and given the necessary instruction to operate and care for a modern automobile in a remarkably short time. On the other hand, there are some men who gain the necessary knowledge by their own exertions. Some buy books on the subject and study them nights while work-



JED NEWKIRK IN A S. & M. SIMPLEX CAR, ON HIS TRIP FROM TONOPAH TO DEATH VALLEY. FORDING THE AMAGOSHIA RIVER, THE WATER COMPLETELY SUBMERGED THE MOTOR WHILE CROSSING AT THIS POINT, AND SHORT CIRCUITED THE MAGNETO BATTERIES HAD TO BE USED FOR IGNITION.

and ramming through snow banks five and six feet deep. The party finally returned to Goldfield and from thence made their way back to Tonopah. Through the snowdrifts it was necessary to use one car as a snow plow with the second car following in its tracks, pushing the first; then both cars retreating and making a new attack to gain a little more headway. This was done for ten hours at a stretch during part of the journey.

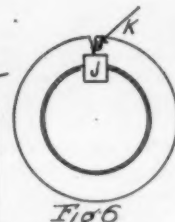
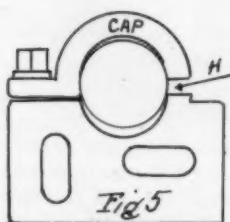
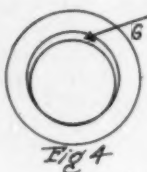
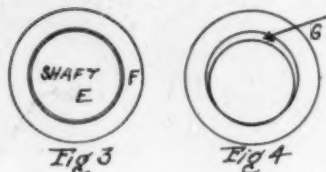
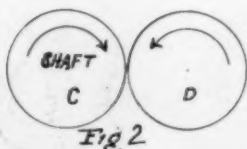
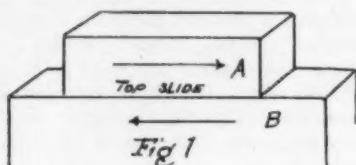
Upon arriving at Tonopah, Mr. Newkirk made a close examination of the motors and said: "I was surprised to find that the motors were in a better condition than before the trip. I at once wired Smith & Mabley about this marvelous performance; also an order for two more cars of larger horse-power to be made according to my stipulations. I have no doubt but the two latter will be in every way competent to undertake any trips which they may be called upon to make through this country."

ing at other business. Some go to work in automobile shops and get the mechanical knowledge of the machines in this way. Some hire out at once and endanger their employer and machine by attempting something they do not thoroughly understand. These men depend upon "picking it up" gradually. Under ordinary circumstances a poorly qualified man cannot secure employment as a chauffeur. Credentials are demanded, and unless the party can furnish them he is likely to have trouble in obtaining a situation. Let us see what some of the requirements are of the up-to-date chauffeur. He must possess mechanical ability. He should be a man of courage and determination, for in these days the average owner of a motor car does not like to have his machine slowed down at every turn of the road or railroad crossing. The modern chauffeur must be a sober man, and careful. Once he is detected

in a drunken state in the front seat he is discharged. He must keep brisk and clean, for the people who own automobiles are of the class that consider appearances. But above all comes the mechanical end of the situation. If the chauffeur is a good mechanic and can keep the high-priced machine in order the chances are that some other defects will be overlooked.

We have drawn up a few illustrations explaining some of the principal factors essential to successful operation of the modern automobile. First, let us see about the lubrication.

If the chauffeur will take two smooth pieces of metal and place them in the position shown in Figure 1, and endeavor to move one surface over the



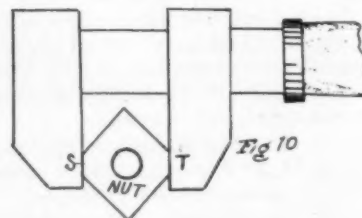
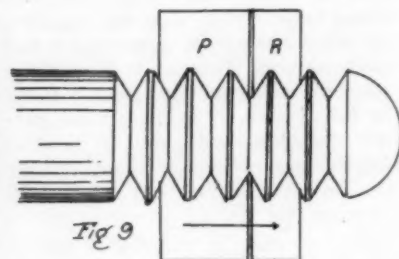
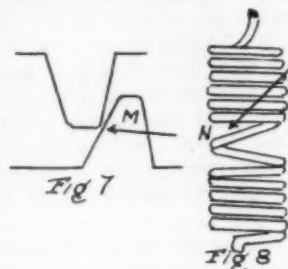
other without applying a lubricant, he will find that the surfaces will soon heat, bind and grate, due to frictional contact. This seems to be an elementary subject to mention, but I have seen numerous instances of starting machines running with one or more metal bearings perfectly dry. The dryness does not always result from absolute neglect, but from the fact that the channel to the bearing is closed. If a drop of oil is placed between the two binding surfaces A and B, Figure 1, oil films will at once form, and these films will prevent the two surfaces from scraping against each other. This

means effective lubrication. Anything that interferes with the action of the oil films will prevent effective lubrication, and it is the business of the chauffeur to look out for this. No one else will. The owner of the machine will storm if the box binds, but as a rule he will not seek a remedy. It is the business of the chauffeur to attend to this. The chauffeur will find occasional surfaces in which frictional contact is required, as in a brake, or a cone frictional clutch, as shown in Figure 2. The two revolving surfaces c and d bind to the extent of imparting the motion from one to the other. Such surfaces must be kept perfectly dry and free from foreign matter. Pressure between the two surfaces must be exerted with sufficient force to prevent slipping. Often the surfaces are covered with leather. If so, these leather surfaces must be kept free from oil.

The chauffeur is obliged to understand wear and tear of metals. Figure 3 exhibits a journal in perfect condition, while Figure 4 shows one in which the shaft is worn, thus making a space between the shaft and the sleeve at g. This will produce rattling and develop unnecessary friction. The trouble is averted by procuring smaller sleeves to fit the shaft. Sometimes the sleeves of the box are too small for the shaft, as in Figure 5, in which case the cap does not come down close on that shaft, and an interval is made at h. In a case like this the shaft should be turned down to fit the box, or a larger boarded box used. Then, again, the chauffeur must have a knowledge of metals, so as to favor certain parts. I recollect that a collar worked loose on a shaft. The chauffeur used a hammer on the key until the collar was split as at k, Figure 6. The key is marked j. Collars and hubs of gears and wheels will stand just so much pressure from keys and no more. The moment you get beyond the resisting point the metal cracks and you must seek for a new collar.

The chauffeur must understand locking of gears. One man set two gears with the ends meeting as in Figure 7. Soon the tops of the cogs were worn at m and the gears rattled. The full surface of the cogs should be employed by sinking them to mesh just close enough to avoid cutting a strip of paper passed between. Then there are the springs to look out for. I saw one brake spring drawn out as in Figure 8 at n. This was caused by excessive strain on it. As soon as you draw a steel or brass spiral spring to the stretching point you run that chance of drawing out some of the coils as shown. The slipping or working loose of nuts on bolts and set-screws is another mechanical problem that interests chauffeurs.

If you put a nut loosely on a threaded shaft and jar it the nut will work itself towards the end of the shaft, in the direction of the arrow as in Figure 9. This is due to the tapering sides of the threads. The threads of the nut and the shaft must be free and well oiled to permit this. The object is to prevent this in actual experience. When the nut is screwed down tightly the threads are made to bind by the pressure and the frictional grip is ample to hold the nut securely. In some cases an additional nut is put on as in the cut, in which we show the main nut p and the lock nut r.



Lock nuts are used oftentimes to secure nuts which persist in working loose. Some chauffeurs carry a tool outfit with lock nuts, bolts, screws, etc., in readiness to use. It is a good plan to have a little tool kit in a box for this purpose.

Finally, we refer to the careless use of tools by some men. The other day I saw a chauffeur tightening the nut of a gasoline engine cylinder. Instead of adjusting the jaws of the wrench about the nut in the proper way, he partly closed the same, resulting in the jaws gripping the nut in the manner presented in Figure 10. This sort of work usually wears off the corners of the nut as at s and t. Many nuts and heads of set-screws are ruined in this way.

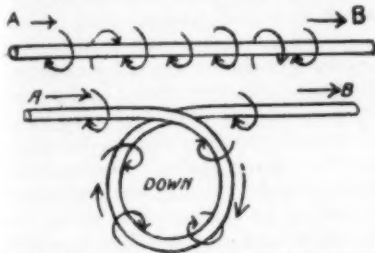
"R."

Popular Engineering.

Electro-Magnetism

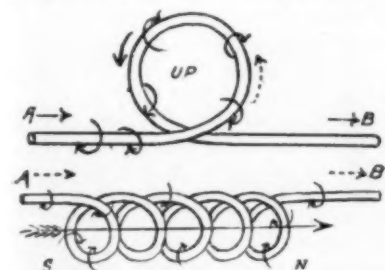
BY ROGER ATKINSON.

If we allow as an ideal representation of the action of an electric current flowing in a wire or conductor in causing the formation of a magnetic field, called from its action of the N pole of a magnetic needle, a field of rotation, it is not diffi-



STRAIGHT AND LOOPED WIRES SHOWING FLOW.

cult to see what takes place when the wire is formed into a coil or helix. Let A B be the wire carrying a current flowing from A to B, as shown by the straight arrows, then the curved arrow will show the direction of rotation of the magnetic field namely, in a direction the same as the hands of a clock. Now, if the wire while in this condition be bent round in a circle as in the sketch, the magnetic field in its rotation will go down through the loop when the wire is bent thus, or will come up through the loop if it is coiled in the opposite direction. It will be noticed that it does not make any difference in the direction of magnetic flow which way the coils overlay, that is whether the wire is wound right handed or left handed. When the coils are repeated, thus, the helix is commonly called a *solenoid* and the greater part of the rotative magnetic field is carried entirely



LOOPED AND COILED SHOWING FLOW OF CURRENT.

through the series of loops as shown by the large arrow, so that the "solenoid" if suspended freely will act in the same way as a magnet and the end from which the magnetic field or "magnetic flow" issues will act as the N end of the magnet. See Fig. 1. This coincides with the theory of magnetic flow generally used to illustrate the action of the permanent

net, namely that the magnetic flow issues at the N end and enters at the S end.

It should be noticed that the "solenoid" may be coiled backward and forward in several "layers" of coils (see Fig. 2), and the action of the current in causing magnetic flow is the sum of energy of all the coils. Those coils which are on the outside having less effect than the inner ones in proportion to their distance from the centre. The hole through the centre of a solenoid is called the "core." If the direction of the current is reversed in any solenoid the polarity is changed, that is the N and S ends are reversed. It was shown that the rotative magnetic field round a single wire decreases in proportion to the increase of distance from the wire. The magnetic field in the core of a solenoid is *uniform* in strength all over the *cross section*, for the reason that as

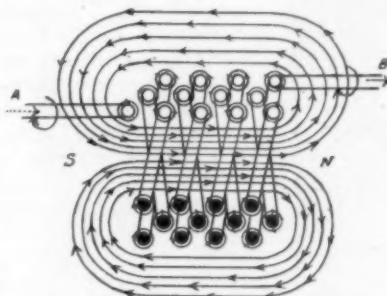


FIG. 2. FLOW THROUGH SEVERAL LAYERS OF WIRE.

any point may be taken to weaken by receding from any portion of the wire it is strengthened in an *equal degree* by its approach to the opposite side. When calculations are made the strength of the magnetic field in the core is expressed in certain units called "lines" per square inch or per square centimetre, exactly as steam pressure is expressed per square inch, or wind pressure per square foot. Coils or solenoids are generally wound upon a thin tube of insulating material with circular ends like a bobbin (Fig. 3), and each coil is insulated by having the wire covered with cotton, silk, or other suitable non-conductor so that the current passes through every convolution, and does not get "short circuited," that is, escape by a short path from one coil to another.

As has been already stated, the solenoid has the properties of a magnet, but is not very strong, as the conductivity of the air in the core for magnetism is very low, so low that if compared with iron, the air being taken as 1 or unity, that of iron may be hundreds or even thousands under certain conditions, which may be explained elsewhere. Few substances other than iron (or its alloy, steel) have

much more magnetic conductivity than air, and none have less or very little less. This magnetic conductivity is called *permeability*, and will be so called hereafter. If then we desire to increase the magnetic force of a solenoid we may do so by placing a bar of iron in the hollow tube, the

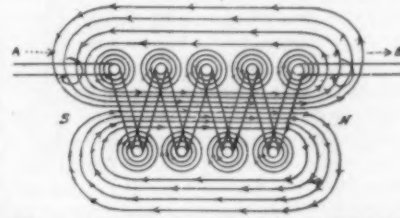


FIG. 1. FLOW OF CURRENT THROUGH SIMPLE COIL.

bar being usually a little longer than the insulated bobbin. The resulting magnetic power in the iron bar is not always the same number of times stronger than the magnetic flow in air (or magnetic "flux," as it is called), but depends upon the relative size of the iron core. If the solenoid is a weak one and the iron core is large the "permeability" (or number of times which the iron multiplies the magnetic flow) is low. If the power of the solenoid is increased, the same bar of iron will multiply the magnetic flow more times, and so on until it reaches a maximum of perhaps 1,200 to 1,700 times, depending upon the kind of iron in the core. If the solenoid is still increased in power the permeability or multiplying effect of the iron begins to fall off, and eventually if the solenoid is made strong enough the multiplying power of the iron disappears altogether. This point is called the *point of saturation*. If the iron core is pulled

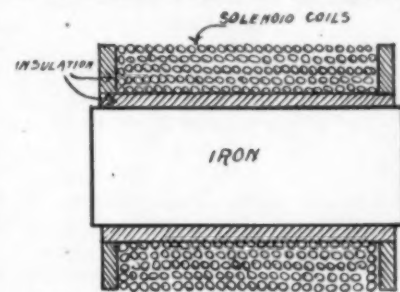


FIG. 3. WINDING OF A SOLENOID.

partly out when there is no electric current in the wire of the solenoid, then when the current is turned on, the iron core will be pulled towards a central position with a force depending upon the power of the solenoid and upon how far the iron is from the centre, and in this way the iron core may be used as a pulling device to produce mechanical movement such as to open or close a switch or valve, etc.

For and Against Fast Trains

A few years ago American newspapers were vying with each other in urging upon railroad managers demands for faster speed of trains. Invidious comparisons were made between the speed of our express trains and those of Europe. Eighteen-hour trains to Chicago and three-day trains to San Francisco were in demand, and the editors professed to believe that such speeds could be accomplished with perfect safety. Fast-speed trains were put on to meet with what was reported to be the popular demand. Now there is a very different sentiment prevailing. A few serious accidents have happened to fast trains during the severe winter, and now the publications that did so much to have them introduced are howling to have the speed reduced without delay.

From Steam Boats to Flying Machines

The International Maritime Exposition, which will be held in Bordeaux, France, from May to November next, will be to celebrate a century of steam navigation. It will be under the auspices of the League Maritime Francaise, and proposes being a very pretentious affair. The exhibition will be under the official patronage and aid of the French government, of the Department of the Gironde, the city of Bordeaux, the Chamber of Commerce, and the Philomathic Society. It is open to citizens of all countries, and will receive exhibits of all industrial, agricultural or artistic products pertaining to maritime affairs. Sections will be devoted to ocean geography, aerial navigation and motor boats. It is the intention to include congresses, competitions and lectures on subjects concerning maritime affairs.

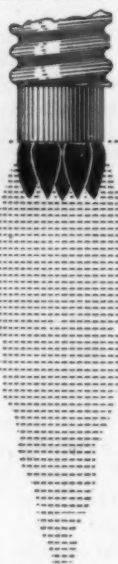
Scientific Invention Practically Applied

Probably one of the most interesting inventions, and one which is used in a great variety of ways, is the Bunsen burner. It was invented by R. W. Bunsen, professor of chemistry at Breslau, and later at Heidelberg, in Germany. The Bunsen burner is essentially one in which the pipe of a gas jet is surrounded by a sleeve, open at the bottom and extending above the orifice of the jet. As gas flows through the jet it draws air in at the lower end of the sleeve, and as it passes through the larger tube it becomes thoroughly mixed with air, and burns with a non-luminous but intensely hot flame.

One of the very interesting uses to which the Bunsen burner is put is its application to the Pintsch system of railway car lighting. The gas is supplied to the lamps by the regular pipe line extending along the outside of the roof of the cars and the supply to each lamp is deliv-

ered or cut off by a stop cock in each arm. The gas passes through each arm to which the lamps are suspended until it reaches the last fitting, which is practically a Bunsen burner. The gas issues through an extremely fine hole, mixing itself with air and the gas and air are blown out in a downward direction. Before the mantle, which forms the prominent feature of this light, is applied, the gas appears almost to drip out of the jet as a gentle flame pointed like a crayon which burns blue at the rim and is light green lower down, but is intensely hot.

When this flame is enclosed in one of the specially prepared mantles made by the Safety Car Heating and Lighting Company of New York, it brings the mantle up to a white heat. One of these mantles, not much bigger than a



DOWNWARD
DRIVEN
BUNSEN
FLAME.

or office fixture.

In speaking of the hospital car on the Erie Railroad last month we referred to the lighting as being done with acetylene gas. As a matter of fact the car is equipped with the Pintsch light, the ward where the patients' cots are is lighted by four 4-flame lamps, and on account of the brilliance of the mantle lamps such as we have here referred to, the operating room is supplied with two 4-flame mantle mantle lamps, and there a few ordinary Pintsch bracket lamps in other parts of the car.

Speaking generally, a Pintsch mantle lamp about equals two sixteen-candle power electric bulbs, and the consumption of gas as quoted by the makers is something less than one cubic foot per mantle-lamp per hour. The mantles are protected by the globes when being handled and when in use, and they are said to last with fair usage about three

months. The company has issued a very handsome and interesting catalogue dealing with incandescent mantle lamps for Pintsch gas, and they will be happy to send a copy to anyone interested enough to apply for one direct to them at their New York office.

Magnificent Japanese Cruiser

The Japanese armored cruiser Tsukuga is on her way to Virginia to be present at the Jamestown Exposition. This ship has a speed on natural draft of about twenty-two knots, which is better than any of our own cruisers can do, and was turned out from a Japanese shipyard by Japanese workmen, who are just beginning naval construction; yet, according to naval experts, the ship is perfect in every detail. Second, that the Tsukuga was under commission and on the high seas within two years from the date her keel was laid down in Japan.

No such speed of construction as this has even been attained in American shipyards, at least where naval work was involved, and the best British record, namely, in the case of the Dreadnought, is only slightly better than that made by the Japanese shipwrights in the building of the Tsukuga.

The Japanese ought to have paid a visit to San Francisco with this vessel as a sort of peace offering.

Slavish Imitators

There are many manufacturers of machinery who care nothing about originality of design so long as they are free to copy the forms and inventions of more enterprising competitors. Every manufacturer should watch the designs and improvements introduced by competitors with the view of improving his own product, but it should be his pride and ambition not to travel in the footprints of his rivals.

The practice of slavish imitation is particularly prevalent in the automobile making business. We have frequently examined models of new machines expecting to find something original about them, and found nothing but bare imitations of others that had been built before. Our impression is that many concerns that have entered the automobile building business have imitated parts of various makes and added nothing of a new or original character.

The present is a good time to make observations on ruin of our highways through reckless neglect. Ruts and holes left by the action of frost are permitted to enlarge until roads that a little mending would have put in durable condition fall rapidly into ruin through sheer want of attention.

Motor Driven Cargo Barge

Pickford & Co., Ltd., London, the famous trucking company, have had a sea-going motor barge built, called the Wasp, which is a new indication of how the internal combustion engine is making its way into all departments of the carrying trade.

The engine of this barge has a single cylinder with crank revolving in an inclosed oil-retaining case. The ignition is electric low-tension, with oscillating magneto, driven by the same shaft as the exhaust valve, with make and break contact moved from the oscillating lever of the magneto apparatus.

The Wasp is 55 feet 6 inches long and 12 feet 3½ inches beam, says *Marine Engineering*, with a draft when loaded of 3 feet 6 inches. She has a capacity of 20 tons deadweight, and 33 tons cubic measurement on 3½ feet draft. She has a speed of 7¼ knots, and is provided with a motor winch capable of lifting a half ton, and located in the engine room.

This barge is built of mild steel, the peak being about 2 feet 8 inches long, taken at anchor chain. The propeller frame is 3 by 1 inch and the stern frame 3 by 1 inch, while the rudder head is 2½ inches and the rudder plate ¾-inch (single), the outside plating being ¼-inch and the frame spacing 16 inches. The frames are 2 by 2 by ¼-inch, and the floors 6 by ¼-inch, while the deck is ⅞-inch and the ceiling 1½ inches. The beams are 3 by 2 by ¼-inch, and those along the side hatch 2 by 2 by ¼-inch. This data is given in detail, as steel boats of this type are not extensively used with internal combustion engines.

How Amateurs May Do Brazing

Jobs of brazing have to be done so frequently on automobiles by workmen not familiar with the proper way of doing the work that we venture to publish a few directions that are likely to be found useful.

In brazing brass, copper, wrought iron and steel, clean the metal thoroughly at and near the joint to be brazed by scraping or filing. Be sure to fit the edges close together. If great strength is required, lap the edges by each other about a quarter of an inch. A good plan is to rivet the edges together to hold them in position. We have found the rods of steering gears but brazed, which is a criminal practice.

Next place the brazing material along the joint. Take borax, finely powdered, wet it with clean water and place a small quantity along the seam. Put the article over the forge, with a charcoal fire, with the joint down. Heat it slowly and evenly, holding it an inch or so above the coal. Hold the article in one hand and a small iron rod in the other.

If the brazing material should be moved

away from the joint by the borax, place it back before it melts. When it is all melted, rap the article lightly with the rod, which will help it to flow all through the joint. Remove it from the fire as soon as all the brazing is melted, and hold it horizontally until it cools, so that it will not run. If the article is brass or copper it should be plunged into cold water, but if steel or iron, it should be allowed to cool slowly. For brazing brass use silver; for copper, iron or steel use spelter or thin strips of sheet brass.

Accidental Discoveries

The metal business owes many valuable discoveries to accidents that happened under the notice of men who had acquired habits of observation, and the capacity of reasoning between cause and effect. Malleable iron was discovered by

sistency in some simple form or style in the finish and ornamentation of the work. If the work be a machine, all of the visible shafts, butt stud and nut endings should be turned or milled carefully to the same general shape or form. There is nothing so neat and appropriate as the simple reverse curve style, free from corner or bend. Inward corners should always be avoided. There is nothing so discouraging in machine cleaning as complicated bearings or complex moldings. They are, as in house economy, only dirt catchers, void of beauty.

It is no light task to keep a complex machine like an automobile clean and tidy under ordinary circumstances, but the task is rendered doubly hard when the fittings are full of projections and corners. Neatness and utility should be always in mind in their design, construction and



A CORBIN CAR ON ONE OF THE MODEL ROADS OF CONNECTICUT.

Seth Boyden noticing that the texture of a cast-iron grate had changed through the bar getting burned.

While R. Mushet was experimenting with tool steel he found that one bar had acquired the property of self-hardening without being quenched in water. That bar was a mystery for a time, till it was discovered that tungsten had been mixed with the iron from which the steel was made.

In the dressing of Mushet steel tools, Henry Gladwin noticed that tools thrown on the floor after forging and cooled by the air draft passing under a door did better work than those cooled in a bin. That led to tests of cooling under an air blast, and it effected a very important improvement.

Advantage of Simplicity of Design

Next to good fitting there is nothing which tends so much to the repute of a good mechanic and his products as per-

finish. A little care on the part of the designer and of the machinist does much to hold up and maintain the good reputation of an automobile.

Judged by the standards of humanity, few people are either good or bad. "I have not been a great sinner," said the dying Nelson; nor had he—he had only been made a great fool of by a woman. Mankind is all tarred with the same brush, though some operated upon when the brush is fresh from the barrel get more than their share. The biography of a celebrated man reminds me of the outside of a coast guardsman's cottage—all tar and whitewash.

THE AUTOMOBILE MAGAZINE has the largest news-stand sales of any monthly in that line. Its paid subscription circulation is second to none, and the quality of that circulation makes it highly valuable to advertisers.

The Automobile and Its Relation to Health

By W. L. FRENCH.

The desire to attain perfect physical and mental poise is the *ultima thule* toward which the average man aims, either in thought or action; and now the trend is in the direction of all forms of athletic pursuits. Opportunities for systematic exercise in many cases seem to be almost wanting, especially where the stress of business or social requirements prevent the individual from taking time for bodily improvement.

However, the advent of the automobile into every realm of human endeavor has directly contributed to the health of nations, by giving to many the delightful means of securing an even balance of all of their powers.

The decline and fall of that unholy empire of stimulants and drugs is also in sight, for the motor car is largely used by many men and women whose occupations compel them to resort to outside aids for rebuilding wasted nervous energy. The auto enthusiast may not realize that the interest he takes in the mechanism of the machine is really the first step towards bettering his health environment. From the man who drives the light-fingered runabout, which steals away his worries, to the individual whose midwinter madness enables him to operate with seven-leagued "shoes" his 60-horse-power reindeer across a continent, each gains what he directly has not set out to secure—a renewal of mind and body.

The automobile is the only appetizer that puts one's teeth on edge—for a good meal. Like an automatic nurse, it mechanically soothes the patient with the remedies of enjoyment, exercise and pure air, and the medicine is taken and absorbed without question. No rebellion is shown, for it is so subtly administered. And if for no other reason than the fact that the motor car is an instrument that dispels the cares and relieves the responsibilities of life, it has become a permanent faction in civilization. There is no finer first aid to the injured body and mind than this piece of mechanism, which, once designed for pleasure, is now acting as a lasting substitute for many noxious things that harm and destroy the individual. Speed, power and endurance are the free gifts this health dispenser bestows, even though it does not possess the same qualities itself.

Although the claim is often rightly made that the excitement due to motoring is apt to make too great a drain upon the whole physical system, yet a moderate use of one's motor car is highly recommended by physicians in cases where outdoor existence is one of the prime requisites.

In speaking of the physical uplift that automobiling affords the patient, Dr. A. Oberdorffer, of New York, voices very fully the opinion which is held by many

of the medical profession. "Again and again I am requested to suggest some real and mild form of exercise that will take my patient's thoughts away from himself. This is especially so where the illness is the result of overwrought nerves or any strain upon the system due to excessive brain storms. Irritable persons can employ their machines for the express purpose of being out in the fresh air and to get a change of outlook, but they must be driven slowly at first. Whenever it is a case of neurasthenia, which makes the individual very much unsettled, a quiet jaunt into the country in a low-powered car is especially recommended. After a few of these trips, I find that the patient becomes more settled and calmer, and even inclined to desire to do a little of the driving. A quick spin—but not too quick—in the open, either through the city's



A CONCLAVE OF POPES ROAMING FAR AFIELD.

parks or where the scenery is constantly changing, produces a marvellous effect upon the mind, even though the body does not respond in the same manner.

"It is a very short while and then comes the transformation, and it is generally sudden. My patients have taken such an interest in the art of running the car that they at once demand that they be permitted to drive for themselves. And, alas! That means that my services are no longer required."

As there is hardly a class of individuals upon whose physical and mental resources there is a more tremendous strain than physicians, yet there is hardly one who can afford the up-keep of a motor car but owns one, and that not from the standpoint of business only. "By operating my machine," says a well-known surgeon, "I secure more complete relaxation from the attendant anxieties of some severe problem which must absorb my entire thought and attention than in any other way. I completely forget, for the time being, that a human life hangs upon my skill, and my only ambition is to make the motor go.

Nothing else seems to matter, and in consequence I return to my duties with a clear brain and a steady hand."

Hence, if the members of the medical profession find from actual experience that their automobiles are sign-posts to health, there is no layman need hesitate to follow the same course of action and adopt a treatment which is rational.

Further, the leaders of our industrial systems, our prominent promoters and countless others in every walk of life are far better able to perform their mental feats by employing a mode of pleasure which is also productive of good.

That the faculties becomes especially alert and keen, recovering almost at once their normal condition, after a strenuous day on the "Street," is manifest from the testimony of E. H. Harriman. "When I discover that I am at the breaking point and need to get away from my multitude of cares, I rush for the company of my car. I have begun to realize that there is no better method of recuperation than a moderately rapid run through the country. It clears up the fog, and in no time I am as good, if not better, than ever." And with this statement Andrew Carnegie concurs in no unmeasured terms: "I am fond of walking and riding, and of steam and gasoline, but the motor car delights me. It is the rational plaything of health, and I grow younger in spirit every day because of it. You know that 'when a body meets a body' flying on the road—well, it's stimulating like some other things that are Scotch."

Now, there is a relationship between mechanical genius and ill-health, although it may not be apparent at first thought. Yet, the experience of Sydney S. Breese, one of the designers of the B. L. M. motor product, illumines vividly the reality of this relationship. His remarks are significant with truth when he states his point of view. "It was due to a nervous affection of the eyes and head when I attended the Harvard University," he responded, "which led me to use an auto as a means for recovery. It was the only kind of physical exercise I had the hardihood to take, and, furthermore, the physician advised it. My whole ambition was to get well as quickly as possible, and in order to do so I began at once to learn the tricks of my car. My taking this step really was the cause of a new train of thought, which had not appealed to me before. The first thing I knew was my waking up with the plans evolved for the construction of a novel motor. And it was not long before I was completely well.

"Yes, the game is worth the candle, even if you burn it in the middle and at both ends, for as fast as you exhaust your energy it returns by other routes. Motoring is a sort of life insurance, the premiums of which are light and the dividends heavy."

This automobile contagion is spreading, and it is one that should be cultivated, because it has linked together in an emulative bond of sympathy nations and individuals. The mental uplift is as evident as the physical, since "All the world and his wife" is flocking to its standard.

The anxious parent, who regarded "The Red Devil" with dread, now recognizes that the child's development increases in proportion as his body is strengthened by driving his car. Young men and maidens, as well as children, are no uncommon

closely the almost cool indifference of these experts after undergoing such a terrific strain, this false impression would be instantly dispelled.

No stronger or more robust set of men are to be found. They never suffer from the complaints due to our over-civilization, but are ever ready to meet the demands made upon their physical powers. Keen of eye, with hands and muscles alive and responsive to faculties alert and clear, they achieve daily what is less possible to men in other professions—the control of an instrument which carries in its vitals the possibilities of death.

And why is it?

The average driver rises early and works hard and late, deep-breathing exercises being merely a matter of course. Every organ of the body performs its functions, and lung troubles are reduced to a minimum. His mental horsepower must also

Before I start out to take any trip, no matter what the weather conditions may be, I limit myself to only non-intoxicating drinks; and I know hosts of others who do the same. One of the greatest dangers are the wild chances people take in speeding mildly within the law, after possibly they have dined not too wisely."

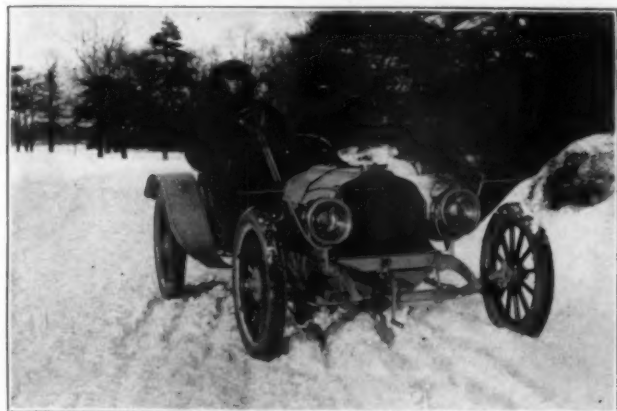
Now that the call of the wild is beginning to be heard, and the fresh fragrances of the woods and fields abound, the open road and the blazing of new trails to the mountains and the sea are privileges extended to those who respect their physical well-being as they value their automobiles.

Automobiling may be defined as *that* without *which* is *torment*, but in the possession of which there is an inward and spiritual grace leading towards self-mastery of both body and mind.

Darracq Extension

Owing to its rapidly increasing business, the Darracq Motor Car Company has found it necessary to utilize their entire building at 1989 Broadway, New York City, for showroom purposes and enlargement of office space, necessitating the removal of the repair shop to some other building.

A new repair shop has been opened by them, using the entire two-story building at 20 West 60th street for this purpose. The installation of all new and improved machinery, especially adapted for automobile work, in conjunction with their



SIDNEY S. BREESE IN HIS B. L. M. CAR, ENJOYING A COLD EXPERIENCE.

sight at all of the large resorts, bareheaded and exuberant with vigor, drinking in vitality with every turn of the steering wheel. Thus, the constitutions of the youth throughout the land are enabled to present a staunch bulwark against the fatal assaults of disease.

In this connection, the attitude of the heads of our institutions for crippled and fragile children is most favorable. Gladly do they accept the invitations of "The Kings of Gasoline Row" to take the little ones on the ride of their lives. As thoughtfulness for others and kindness are heart tonics, so the desire and will to benefit the unfortunate and weak are additional evidences that the divinity of the machine is also the goddess of health.

In view of the numerous fatalities thus far connected with motoring, there has sprung up a lively though natural prejudice against the automobile. But upon investigation the greater proportion of accidents are the result of reckless driving, the man at the wheel being either incompetent or under the influence of stimulants. Truth is, that the majority of those who drive are careful never to go to excess in the indulgence of their appetites. They value their machines as they would a valuable though restive horse, which is unruly when not held in restraint. It is also asserted that race drivers rarely come out of a contest without a marked injury to their nerves, and that the bravery and daring shown is really brought about by the use of liquor. However, if you regard

show reliability and endurance, else he is disqualified from the start. Hence it is that recruits from almost every institution

of learning in the country are entering the field, since it offers so many opportunities for a continuance of bodily culture of a fresh and enduring kind. It is a strong commentary well worth consideration that among the business men who can and do operate their own cars, that very few would think of taking anything of a stimulating nature before they set out to drive. They know the danger. With reference to this, Allan Hawley, of The Automobile Club of America, contributes his opinion: "It is folly for any one who appreciates the value of his own life, not to say that of others, to indulge even moderately while driving, if he expects to be immune from the ordinary chances of accident. I have driven my automobiles all over this country and Europe, and I find that our friends across the water agree with me in this particular.



COLUMBIA VERSUS COLUMBIA IN THE PACE WHICH CURES.

light and spacious quarters, gives the Darracq Company one of the most modern and best equipped repair shops in New York City.

The services of an expert foreman have been secured, who formerly had charge of one of the largest automobile repair shops in New York. Only the best French and American mechanics are employed, familiar with every phase of motor car construction and customers may rely on it that repairs done at the Darracq shops will be done properly.

Information Bureau

We are always pleased to publish answers sent to this department and we invite the sending of questions likely to prove of general interest. We answer by mail questions relating to the merits of various cars or automobile appliances.

Systems of Ignition

G. E. O., Chattanooga, Tenn., asks: What advantage has electric sparking devices over the hot-tube system? A. They are more reliable.

Reliable Automobile Book

Garage, Jersey City, writes: Is Ho-man's book on "Self-Propelled Vehicles" a good one for a young man who is trying to learn all he can about the construction and care of automobiles? A. The book is as good as anything we know for your purpose.

"Alcohol"

W. B., Tarrytown, N. Y., writes: 1. Do you think that in the near future alcohol will be as cheap a power for automobiles as gasoline? A. That will depend so much upon the action of the combinations that control the production of alcohol and gasoline that it is hard to make a prediction. 2. Would you advise me to purchase a car specially adapted for using alcohol? A. No. Wait until such a car is upon the market.

Ability of High Steam Pressure

J. K. E., Cleveland, O., writes: What is the advantage of using steam at excessively high pressure, such as 500 pounds to the square inch? A. The advantage of very high tension steam for automobiles is that small cylinders may be made to develop great power. For ordinary steam engines there is no advantage of using steam above 200 pounds pressure, for the extra expense in maintaining boilers costs more than the saving of steam in the cylinders.

Solomon de Caus

S. C., Woburn, Mass., writes: I have heard that a priest named Solomon de Caus performed useful work in developing what afterwards became a gas engine. Can you give me some particulars? A. Solomon de Caus was not a priest, but an architect and engineer in the employ of Louis XIII, of France, about 1615. He experimented with steam as a means of raising water. He published a book in French called "Les Raisons des Forces Mouvantes avec Diverse Machines Tant Utile que Plaisante" (The Cause of Mov-

ing Forces with Different Machines More Useful than Pleasant). De Caus was one of the many philosophers who speculated concerning steam during the sixteenth century without adding much to human knowledge. We do not think that gas engines received his attention.

To Harden Cast Iron

R. V. M., Charlestown, W. Va., writes: Is there any way of hardening cast-iron fittings that is not likely to damage the metal? A. Take one-half pint of sulphuric acid, one peck of common salt, one-half pound saltpeter, two pounds alum, one-quarter pound prussiate of potash, one-quarter pound cyanide of potash and dissolve in ten gallons of soft water. Equal proportions will serve when small articles are to be hardened. Heat the iron to a cherry red and dip in the solution. If the pieces are wanted to be very hard, repeated heating and dipping will be necessary.

Judging Speed

Jap, New York, asks: Can you tell me how to tell the speed of trains and automobiles one is riding upon without the help of a speedometer? A.—With passenger trains the best way is to note on your watch the number of seconds it takes to run between two mile posts. At night you can approximate the speed by the click of the wheels on the rail joints. By holding your watch and counting the clicks for 20½ seconds they will approximate the speed in miles per hour, when the rails are thirty feet long. Experience only can help you to judge the speed on an automobile, but every car of that kind ought to have a speedometer.

Grinding Valves

E. T., Stapleton, S. I.: We have described the grinding of valves in previous numbers of AUTOMOBILE MAGAZINE, but it will bear repetition. A drill brace with a screw-driver to fit the slot usually made in the center of valves is the first requisite. Then mix some medium emery powder with thin lubricating oil, and place a thin layer on the valve face, then grind the valve, repeating the layers of emery and oil, taking care to lift the valve from its seat after every few turns. This prevents the emery from cutting deeply into the seat or valve face. Finer emery should be used in finishing. A valve can be readily tested by being perfectly dried and put in place and rubbed without turning entirely around. The valve face and seat should show a polished surface, any

defect being readily noticed. Valve stems should be left with a slight clearance between the tappets to allow the valves to bed properly in their seats without binding on the stem.

Men of Buckram

Youth, Baltimore, writes: I am chauffeur for a gentleman who treats me well, but is very stand-offish. One day that we made a very fine run he said I was "a man of buckram." I have asked several people what he meant, but they cannot tell me. One said it meant that I was stupid enough to buck a ram, but I don't think that was the meaning, so I ask you, because the AUTOMOBILE MAGAZINE answers questions the people can understand. A.—We think your employer intended to say you are a "man of courage." "Man of buckram," is an old expression, used frequently in Shakespeare's works. When Falstaff went to rob the king's couriers at Gadshill he was assisted by men of buckram. Buckram was a leather dress that was supposed to impart courage to the wearer.

Ignition

A. F. P., Sharpsburg, Pa., writes: Please explain why you advance point of ignition. The books seem to differ on the subject. A. The advancing of the spark is a convenient method of speeding up the engine. If the spark is retarded until after the piston had reached the top center and was passing on its downward stroke it would be a late spark. If the spark is advanced so that it occurs before the piston had quite completed the stroke the effect is to increase the speed of the engine proportionately to the distance in the revolution that the spark has been advanced. It can readily be understood that when the piston is traveling rapidly if the explosion does not occur until the piston has passed the center, the piston will be a considerable distance on its downward path before it can receive the force of the explosion. The larger space also lessens the force of the explosion. It will thus be seen that the advancing of the spark becomes a necessity if a high speed is desired. There is, of course, a limit to the advancing of the spark, which can readily be determined by experiment.

There is nothing more beautiful in the young than simplicity of character. It is honest, frank and attractive. How different is affectation! The affected are simply unnatural. As for originality, if they ever had it, they have crushed it out and buried it from sight utterly.

EUROPEAN NOTES, NEWS AND COMMENTS

By *A. F. Sinclair*

A BAS LES AMERICANS!

The members of the French motor manufacturing industry are really angry. It appears that American makers have dared to suggest the gross impertinence of bearding the lion in his den, "the Douglas in his hall," to speak metaphorically; or to put it in plain working-day terms, they propose to make a bid for the European market by holding a competition in Europe. Now, this is really distressing—to France. Because, of course, everybody knows that France should be allowed the most complete immunity from restriction in her efforts to hold the most of the world's trade, but it becomes a perfectly scandalous proceeding when another country proposes to sell cars in France. In these notes some straight remarks have been made at one time or another regarding the absolutely sordid basis on which all competitions in France are conducted, the whole object of every contest being one of grab for the French makers. But the Frenchmen never gave themselves so completely away as they have done over the threatened American invasion. *Les Sports*, a daily, published at the French equivalent of one cent, goes pretty nearly frantic and the editor, Georges Prade's, annoyance appears to be terribly augmented by the fact that the organizer of the proposed little trip, Georges Dupuy, is himself a native of the country to the ruin of which his efforts are at present directed.

"LA COUPE DE LA PRESSE."

This is the title of a sort of Tourist Trophy race which the French clubs are organizing, but it improves on our Tourist Trophy contest by connecting a reliability test with a race, and in both the quantity of fuel will be limited. The reliability test to be known as the "Criterium de France," will be about 700 miles in length, to be covered in four days, the fuel allowance being limited to 20 litres to every 100 kilometres. This limit is not by any means exacting. It is equal to 4.4 gallons to 62 miles, or just over 14 miles per gallon, a much easier problem than a gallon to twenty-five miles, the British limitation. The second part of the competition is a race of about 250 miles. The combination should prove a very satisfactory test of machines, because if a car can go through a sufficiently drastic reliability trial, and then win a race at good speed, there cannot be a great deal to ask for in its mechanism. In this competition the French club has rather stolen our thunder. It will be remembered that in a recent issue I mentioned that some such contest had been proposed by the Scottish Automobile Club through

a combination of the Scottish Trials and the Tourist Trophy race. To that proposal the English club would not consent, it might have brought a number of their weaknesses too clearly into the light.

CHEAP ALCOHOL.

It will be within the recollection of the readers of this interesting paper who deign to peruse these notes that a committee of the Motor Union—a combination of most British motoring clubs—has under consideration the discovery of a cheaper and more widely distributed source of supply. In the course of evidence given by the manager of a British

the other day when replying in Parliament to a question on future taxation. He said that he could not give any information, but would direct attention to his promise of last March (1906) that in widening the range of taxation luxuries such as deer forests, salmon fishings, grouse moors, yachts and motor cars would receive serious consideration. This is taken to mean that when the annual budget comes up next month motor cars will have further taxes to pay. At the present the tax varies from fifteen shillings (\$3.75) for a motor cycle to eighty-four shillings (\$21) for a car over a ton in weight. The anxiety of motorists will



IN CENTRAL PARK AFTER A HEAVY SNOWSTORM.

oil concern, he stated in passing that alcohol could now be produced for three pence (six cents) per gallon. The witness is a highly educated and experienced chemist, and a man in his position is scarcely likely to have spoken at large. It may be taken that the alcohol referred to must be that produced by chemical means from cellulose. Should the statement be authenticated motorists may rest in peace of mind so far as the fuel question is concerned. Alcohol at three pence per liquid gallon can hold its own with any hydrocarbon at present known to chemistry. It is a pity that the witness, Mr. Alexander Duckham, did not furnish some details of the process of manufacture.

BRITISH TAXATION.

A rather ominous note was struck by the British Chancellor of the Exchequer

be as to the basis on which taxation will be levied, because the weight method of assessment is simply absurd. A car may weigh 4,000 pounds and be worth, say, \$2,500, while another weighing 3,500 pounds is worth \$6,000, and under present day methods the first would pay most in taxation. The horse-power has been suggested as a basis, but a colleague of the Chancellors stated some time ago that horse-power as a means of arriving at a fair adjustment between cars was unsuitable. It is, therefore, moderately certain that the new tax will be according to value, the only remaining means of assessment.

THE RENARD TRAIN.

The most serious objection to trains on roads is the damage done to the surface by the usual traction engine used to draw them. These engines are heavy,

cumbrous machines with wide large wheels and it has been found that they cut up the roads to a frightful extent if used any length of time. To avoid this damage Colonel Renard, formerly an officer in the French army, now dead, invented the train which bears his name. This contrivance consists of a powerful motor car of moderate weight, driving a universally jointed shaft the whole length of the three or more cars of which the train is composed. The result of this arrangement is that the power takes effect on the driving pair of wheels of each car and the necessity for a heavy tractor is avoided. In the driving shaft joints, couplings, and other details a great deal of inventive genius has been used, the manoeuvring of the train being one of its most useful features. This train has been sent over to England and has been undergoing certain trials under the supervision of some war-office officials with a view to its adoption for use in the British army. The performances are said to have been satisfactory.

Petrol or Paraffin

While the lighter form of these liquids, whether known as petrol, motor-spirit, or any other name, will probably continue to hold the field for road vehicles, the use of paraffin for internal-combustion engines used for the propulsion of boats is a matter coming rapidly to the front and is worthy of consideration. In the first place petrol is admittedly more dangerous, because tanks are seldom absolutely tight, and as the oozing vapor is heavier than air, it settles about the bilges, being always a source of dread when a light has to be used. This is a fact beyond discussion; experience has demonstrated the existence of a real danger, with the resulting discomfort of mind, to people who use boats thus equipped. But it must not be assumed that petrol should be proscribed entirely from use in boats, because for certain purposes, such as rapidity of getting under way, petrol as fuel is superior to any other, and in such vessels attention should rather be directed towards minimizing as far as practical the danger involved in its use.

Paraffin is not possessed of the high inflammability of petrol; it does not vaporize so readily, hence special methods have to be adopted to convert it into a gaseous state. These methods may be grouped into two distinct types, one in which the vaporization takes place after admission into the combustion chamber, and another in which the liquid is vaporized before being admitted. In the case of the first the purpose is to pulverize the combustible liquid in as cool a condition as possible, then

mix the finely powdered liquid with the required proportion of air containing the oxygen needed for combustion, and to secure vaporization after admission into the cylinder by means of the waste heat from the preceding burnt charge. Some tentative experiments would seem to prove that this method is faulty, the vaporization being imperfect, with the result that some of the mixture coming in contact with the water-cooled walls of the cylinder, it separates into its components, with resulting fouling of the parts. In the case of the other method, some ingenious devices are employed by which the mixture is heated and vaporized before admission; but none of them entirely solves the problem of using paraffin as fuel in petrol motors. This carburated mixture when compressed in the cylinder acquires an explosive force of a rather different character from that of petrol under



like conditions. It becomes more of the nature of explosion than combustion, and would seem to suggest that, to use it to advantage, lower compression than usual with petrol must be resorted to. But reduced compression may create other troubles. There comes in here the question of the proportion of the length of connecting-rod to piston travel. When the indicator curves of a motor in which both petrol and paraffin have been used are examined it is seen that the part of the diagram corresponding with the expansion stroke where petrol is used the greatest pressure is exercised on the piston after the latter has traveled an appreciable part of the stroke, whereas in the case of paraffin the maximum pressure occurs immediately. It is easy to understand without a diagram that in the case of a crank operated by a connecting-rod there is a point in the movement when their maximum pressure can be exercised with greatest advantage, and that point is certainly not when the crank and connecting-rod form a

straight line. In this movement the length of the connecting-rod is of some importance, because if it is short in relation to the stroke the shorter will be the period which it remains sensibly in a line with the crank. There are a number of other points involved in the subject, but the most important are the designing of a motor of moderate or low weight for its power, and a carburettor or vaporizer which will produce the most complete combustion with a maximum pressure at a more effective part of the stroke.

To Avoid Accidents

A committee of safety of the Automobile Club of America, of which Mr. Winthrop E. Scarritt is chairman, have sent a circular addressed to "The Automobile Public," in which very sensible directions are given as how to avoid accidents. Any one interested can obtain a copy of the circular by applying to the club. Here are two specimen paragraphs:

A study of conditions under which automobile accidents have taken place discloses some interesting facts. There have been very few accidents on open country roads, although it is in such places cars are driven at greatest speed. Hon. J. B. R. Smith, the able and efficient Commissioner of Motor Vehicles for the State of New Jersey, who has studied the subject of automobile accidents most carefully, states that most of the accidents occur when cars are being driven at a rate of speed less than twenty miles an hour.

It is not a question of speed alone—it is speed plus certain conditions. Accidents most often happen in passing street cars. A passenger is hurrying to catch a car. His mind is fixed on that single object; he does not observe the approaching motor car, and unless the driver thereof is keenly alert and driving so slowly that he can stop instantly, there is an accident. Or, a passenger alights from a car and starts to pass around the rear to cross the street. This condition is a large source of trouble. Many serious accidents have thus happened and on many more occasions exceedingly narrow escapes have resulted.

The girl who endeavors to pay back what she owes her mother is the one who will be most sought after by the people who are worth while, and be apt to achieve the most success in life.

As a substitute for oil upon oil stones, which often thickens and makes the stones dirty, a mixture of alcohol and glycerine can be used with good results.



A PRACTICAL JOURNAL OF AUTOMOBILING AND ENGINEERING

THE AUTOMOBILE PRESS

ANGUS SINCLAIR, President and Editor
JAMES KENNEDY, Associate Editor

Advertising Department

JAMES R. PATERSON, Manager, N. Y.

British Representative

THE LOCOMOTIVE PUB. CO., Ltd.
Amen Corner, Paternoster Row, London, E. C.

Glasgow Representative

A. F. SINCLAIR, 15 Manor Road,
Bellahouston, Glasgow

Copyright, 1907, by the Automobile Press.
Entered at the New York Post Office as Second
Class Matter.

Ninth Year. No. 4

Price, 10 Cents

NEW YORK, APRIL, 1907

Cable Address, Locomoto, New York. Tel. 984 Cortland
Publishing Office, 136 Liberty St., N. Y.

Cars to Carry Electric Generators

Generating electricity by engines carried on a car and then using the electricity as motive power has been repeatedly attempted but the results have proved very unsatisfactory. Several motor cars have been designed to carry power for generating electricity and some of them have been put upon the market, but the results obtained on the road did not encourage the manufacturers to persevere in building cars of that character, and as far as automobiles are concerned, the decision is to keep electricity, internal combustion, and steam motive power separate.

Ten years ago a series of very exhaustive and persistent experiments were made on the Western Railway of France with an electric locomotive which generated the electricity used in driving it. That locomotive was the invention of J. J. Heilman, a Swiss engineer, residing in Paris. An engine of the same type had been used several years before, and its performance was considered so satisfactory that a much heavier machine was built. The engine was a compound six-crank form and was said to work in perfect equilibrium. The steam engine was used to drive two electrical generators continuous current machines independent excited. The electric current supplied by the generators

was conveyed to eight motors which turned the axles. Each motor was expected to develop 125 horse-power at sixty-two miles an hour. The builders expected that that engine would have a train weighing 300 tons at sixty-two miles an hour, but it never reached the expectations and was in no way superior to a steam-driven locomotive.

It does not necessarily follow because failures have resulted with attempts at certain improvements that they are beyond the range of possibilities. The history of invention has shown hundreds of cases where failures repeatedly resulted from persistent attempts to introduce some particular invention, and gratifying success was achieved in the end. There is reason for believing that the plan of generating electricity from

electrical traction, especially for sparsely settled districts.

New Jersey Good Roads

At a Good Roads Convention held in Pittsburgh last month, State Road Commissioner Hutchisson said that the city of Orange took the initiative in the matter in 1868. The example it set was followed by the county road board of Essex in 1871, the work being vigorously prosecuted until 1878. Then there was a lull until 1883, when activity was renewed in Essex and Passaic under a law of the preceding year, permitting freeholders to raise \$25,000 a year for road purposes. The sum was found to be inadequate, and in 1889 the county bonding act was passed. The benefits derived from this law by Essex, Passaic and Union aroused the in-



A. M. ROBBINS AND PARTY IN AEROCAR, MODEL B, ARRIVING AT HOTEL LENOX, AT FINISH OF THE NEW YORK-BOSTON SNOW CONTEST LAST MONTH.

an engine carried on a car is on the eve of being made an unqualified success.

At a meeting of the New York Railroad Club, where many electric experts came together to discuss electrical topics, Mr. Potter, of the General Electric Company, told about an experiment they had made with a steam railroad car which they equipped with a gas engine to generate electricity for driving it. The car weighed some 60,000 pounds and was run regularly at speeds varying from thirty to sixty miles an hour, and no difficulty had been experienced in its operation daily. The same company is now putting the same kind of equipment into a new car half the weight of the other one, and all concerned in the experiment believe that it will introduce a new and important feature with

terest of the State, with the result that in 1891 the legislature enacted the first State aid road law in the United States.

Mr. Hutchinson said that when the first appropriation of \$20,000 was made it met with much opposition, and it was difficult to persuade the counties to avail themselves of its provisions. Despite this early opposition, there have been 1,151 miles of road improved under the State aid law, at a cost of \$6,655,939. To show the change in public opinion, Mr. Hutchinson remarked that when he was elected to the Legislature in 1896 a man who declared himself in favor of good roads would be defeated. To-day the reverse is true. In 1892 the appropriation made by the State was increased to \$75,000; in 1895 to \$100,000; in 1899 to \$150,000; in 1902 to \$250,000, and last year the department had \$400,000 for the purpose of plac-

ing it upon a sound financial basis. After detailing the working of the New Jersey law, Commissioner Hutchinson said:

"Any State passing laws for improved roads should be particular that this important question of repair is guarded, so that the State can insist upon the roads being kept in good condition, especially providing that no county shall receive assistance from the State unless it takes good and proper care of its roads. As to the cost of repair, the wider the road and the better the shoulders the less will have to be spent upon it. We have had quite a demand for narrow roads, but our experience teaches us that it is a mistake to build them. The argument is advanced that a community is able to build a greater number of miles for the same amount of money if it builds narrow roads instead of wide ones. It is better to build less and build good; then the repair account will be smaller, and, as this is an annual charge, the necessity of making it as small as possible is readily appreciated."

Torque or Radius Rod

It will be observed that in the manufacture of shaft driven automobiles torsion and radius rods are omitted in some cases from the rear axle construction. These rods are, by other manufacturers, considered necessary to overcome the tendency of the rear axle to rotate when starting or when changing speeds. A close examination of the structure of many cars, of which the Maxwell is a good illustration, will show that the use of the torque or radius rod is unnecessary.

In starting a car of this kind the torque is taken by the rear springs instead of being directly transmitted to the motor and driving mechanism, as is the case where a torque rod is used. The flexibility of the spring relieves the strain on both the tires and the mechanism. Factory trucks may be seen carrying loads of from three to four tons in all weathers and over every condition of road without the use of these rods. It will be observed that the particular construction that we refer to cannot be used with a full elliptic rear spring, but with semi-elliptic springs of proper weight and properly designed and carefully suspended the construction is an ideal one and is decidedly gaining in popularity among the manufacturers.

Strong Metal for Automobiles

In high-class automobile factories prolonged experiments and investigations have been made to find material that will endure excessive shocks and strains without breakage. It has been this search for strong material that has brought carbon chrome nickel steels and other high-class material into popu-

larity. This quest for high-grade material is by no means universal among automobile makers. Some of them ridicule the idea of selecting high-class material, and use the commercial or cheaper qualities, claiming that it is good enough. Purchasers frequently fail to appreciate the difference in quality; consequently the cheap machine is really the most popular.

An expert, writing in the American Machinist on steels used in automobile construction says: "Silicon, manganese, nickel, chromium, vanadium, tungsten, molybdenum, titanium, arsenic, aluminum, cobalt, barium, manganum, copper, tin, zinc and platinum have been added to steel, in all kinds of combinations, to give it the desired quality for special purposes, and their effects on the physical characteristics of the metal, under various thermal treatments, have been carefully studied, especially by those engaged in the manufacture of automobiles."

There has been demand for extreme strength of metals for various engineering purposes these many years, especially for electric mechanism, yet it has remained for automobile makers to find the material of the very strongest character. That is one important point to the credit of automobile makers, if they should never earn another.

Where Has the Cold Chisel Gone?

An automobile factory may be regarded as the most modern industrial establishment, and therefore we may expect to find in such places the very latest methods of producing and finishing work. I visited a very large, thoroughly up-to-date automobile shop lately and was surprised at the absence of a tool that used to be very much in evidence in my shop days. That was the cold chisel. I did not enter the shop drudgery before the advent of the shaper and planer, but I got there when many men were still toiling daily who preferred using the cold chisel rather than the machine, unless the job called for a deep cut.

Those were the days when cold chisels were fondled and kept in condition for fine cutting. No barber paid more attention to his razor than the machinist paid to his chisels when chipping was in vogue. But grinders and shapers and millers have banished the cold chisel from a modern work.

Vanadium

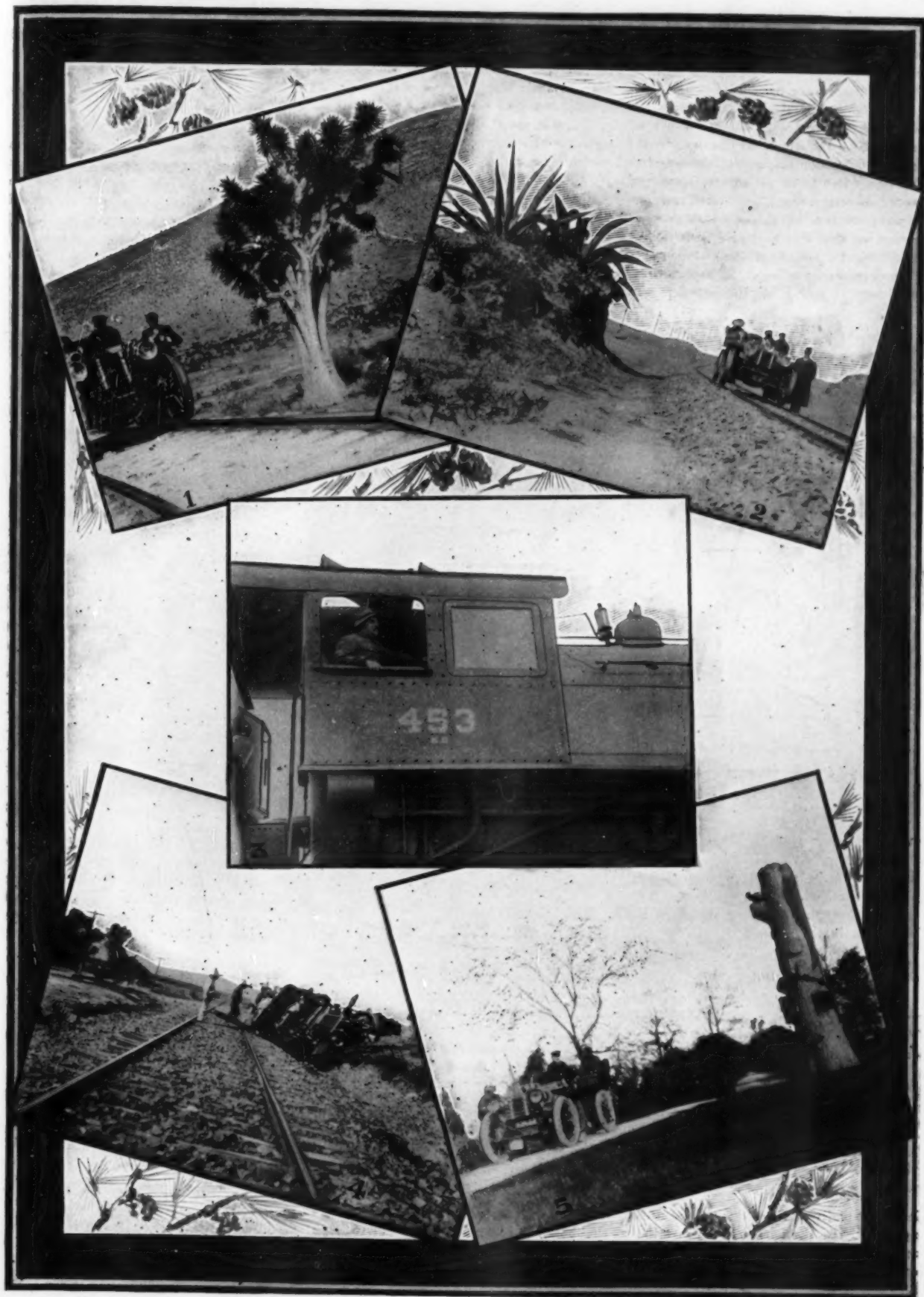
Extraordinary claims are being made for the strength increasing properties of vanadium when added to liquid steel. Those making the claims about vanadium say that steel alloyed with the substance is twice as strong as chrome nickel steel,

and that consequently it will be of invaluable service in the manufacture of automobile parts, subject to excessive strains. Of course if it should strengthen small articles to an extraordinary extent, it would be useful for armor plate and other purposes where strong resistance is of importance.

Some parties appear to be booming vanadium steel and say that vanadium is a newly discovered element. This is not correct, for metallurgists have been familiar with the element for many years. In 1831 Berzelius described a number of vanadium compounds, and concluded that the metal yielded an acid-forming trioxide like chromium and molybdenum. In 1867 Roscoe discovered that the supposed vanadium of Berzelius was either an oxide or a nitride—a discovery which changed the whole aspect of this element, and of its chemical relations, developing the fact that vanadium is closely related to phosphorus and arsenic. Vanadium occurs as an essential constituent of several mineral species, *dechenite* and *descloisite* being vanadates of lead, *vanadinite* being lead vanadate, *volborthite* being a copper vanadate, *psittacinite* a lead and copper vanadate, etc. At Granite Creek, Eldorado county, Cal., in a gold mine, Dr. James Blake, of San Francisco, found a dark green mica, which he supposed to contain chromium largely, but Dr. Genth showed it to contain vanadium, and this interesting vanadium mica was named *roscoelite*, by Dr. Blake, after the chemist Roscoe. Metallic vanadium was obtained by Roscoe by long continued ignition of the dichloride VCl_2 in hydrogen gas, as a metallic powder of a grayish-white color.

Air and water are the great natural distributors of mechanical energy. The currents of rivers represent a portion of the mechanical equivalent of solar heat expended in raising the masses of water that flow through their channels to the clouds. The winds that propel our ships and wind motors are the product of solar energy. The coal buried in the bowels of the earth, which on being brought to the surface performs the principal labors for mankind, originally received its potential energy from the sun's rays.

The restorative power of cheerfulness is far greater than medicine, and mental depression is the true physician's worst enemy. It is the bane of the sick room and the shackle upon recovery. In fact, the mental attitude is responsible for more ills than all other causes put together. If a nurse cannot control her feelings, or the exterior manifestations of them, her usefulness is turned into uselessness, and anything useless in a sick room is positively harmful.



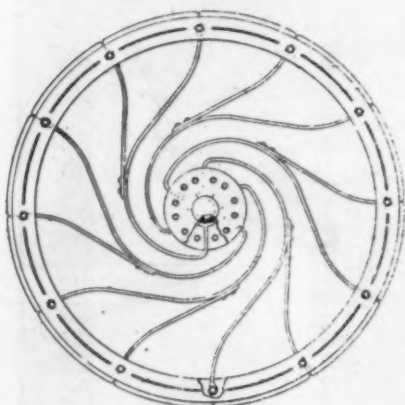
PICTURE STORY OF GLIDDEN'S TOUR TO MEXICO.

Patent Office Department

As will be seen from the selections we have made from the Patent Office reports, our inventors have been busy on the subject of improving the wheels and springs of the motor car with a view to soften still further the vibration incident to internal combustion engines. The carburetter seems also to be an endless source of clever experimenting, and while an important advance was made last year in perfecting the details of the automobile, it is evident from the number and variety of inventions in relation to the machine that there is still room for improvement.

VEHICLE WHEEL.

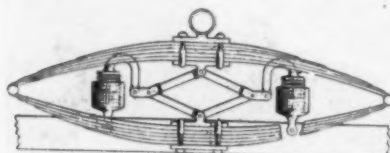
Mr. S. S. Childs, Bernardsville, N. J., has patented an improved vehicle wheel, No. 845,054. The device as shown in the illustration comprises a hub, a series of springs extending from the hub, the



springs being enlarged at their outer ends and having bolt holes therein, a series of segmental blocks abutting against one another to form a rim, and having recessed portions to receive the enlargements on the ends of the spokes, an annular rim-plate on each side of the rim, and bolts passing through the rim-plates and the bolt holes in the spokes.

SPRING.

A spring suitable for motor or other vehicles has been patented by Mr. J. C. Whittle, Jackson, Mich. No. 845,210. It comprises an elliptical spring with two

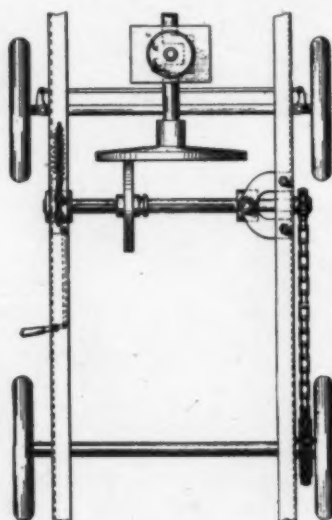


levers pivotally attached at one end to the upper half of the spring near its middle and pivotally connected at their opposite ends to the free ends of the other levers, forming a double toggle connection between the members. Hangers are pivotally

attached to the levers near their connecting pivots and formed with spring seats at their free ends attached to coiled springs engaging the seats on the hangers, and socket members to receive the completed combination to be attached to the vehicle frame.

MOTOR VEHICLE.

Mr. M. Fischer, Zurich, Switzerland, has patented a motor vehicle. The device comprises a driven friction-disk in combination with a shaft and a friction wheel slidably mounted thereon contacting with and driven by the friction-disk. There is a pivoted bearing near one end of the shaft and a slidable bearing near the other end of the shaft, a spring to urge this bearing toward the plane of the friction-



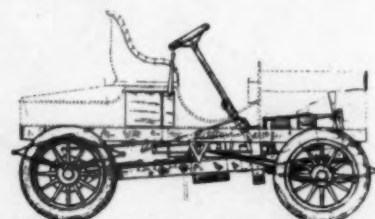
disk, an actuating lever connected to this bearing to move it against the stress of its spring away from the disk, a driving pinion on the shaft and a road wheel chain connected to the pinion whereby the increased tractive force of the road wheel will swing the shaft toward the friction wheel aided by the direct pull of the spring.

SOLID RUBBER TIRE.

Mr. A. H. Marks, Akron, Ohio, has patented a number of devices in the construction of rubber tires, among the most recent being a solid rubber tire, No. 844,821. The tire consists of a number of layers of metal fabric or the like embedded in the base, having the tread and upper portion of the base formed as one part with one or more layers of the metal fabric embedded in the upper portion of the base, and the lower portion of the base forming the other part and having one or more layers of the metal fabric embedded therein, the two parts being firmly united to form an integral whole.

RUNNING GEAR FOR MOTOR VEHICLES.

The Nordyke & Marmon Company, of Indianapolis, Ind., have secured the patent rights of a running gear for motor vehicles, the joint invention of Mr. J. Warrington and Mr. H. C. Marmon, Indianapolis, Ind. Original No. 783,599. The combination, in a running gear, of two frames, one supported from the springs of the front axle and extending back in a downwardly inclined direction toward



RUNNING GEAR FOR MOTOR VEHICLES.

the wheel driving shaft, where it is pivotally supported at a point upon a structure carrying the driving shaft, and a second frame supported by the springs carried by the rear axle and carried forward and supported at the other end by a single pivotal point of support from the front frame. The rear frames are adapted to carry the bed and seats of the vehicle, while the front frames are adapted to carry the motor and driving mechanism.

WHEEL.

An improved wheel for vehicles has been patented by Mr. W. H. Pierce, Maquon, Ill., No. 839,417. The device comprises an automobile wheel, a rim, a plurality of link-plates forming a supplementary rim, lugs integral with the opposite ends of each link plate and having apertures therein. There is also steel-spring loops, a portion of which is received by the apertures to join the rims movably together, and leaf springs to provide resiliency for the rims, and coil springs to provide additional resiliency for the leaf springs and the link plates having flanges to receive the tire.

THE AUTOMOBILE MAGAZINE has the largest news-stand circulation and the most valuable paid subscription circulation of any monthly publication in its line. When a person not acquainted with automobile matters thinks of buying a car he begins to studying the pages of THE AUTOMOBILE MAGAZINE. That makes the circulation valuable to people who have automobiles to sell.

A girl from the country having secured a place as a servant in New York, wrote to one of her friends that she lives in a house called flats, and that they go from one floor to another in ventilators, also that they send their washing to a foundry.

The Auto-Car in Snowstorm

A most remarkable run was made last month by President H. A. Gillis and General Sales Manager Fred P. Brand, of the Autocar Company, in Ardmore, Pa. Desiring to test out a new model auto car, they decided to take advantage of the exceptional conditions then prevailing and left Ardmore early in the morning in a blinding snow and hail storm. The roads were found to be in the worst possible condition, in some places the mud coming up over the hubs; in others it was a mass of

in a deep ditch. The escape of the passengers was miraculous, as the car at one time was in midair, and then on its side, but quickly recovered before coming to a stop. A pair of horses were procured, but they were unable to budge it, and finally four horses managed to drag it out upon the road once more.

A surprising thing then happened. Upon the driver applying the spark the motor sprang forward on its way, greatly to the surprise of the occupants. This was really very remark-

score, but after it was remedied the delay afforded opportunity for making up time. It is doubtful if any other car in the run could have covered the distance from Philadelphia to Harrisburg in four hours and twenty minutes as the Stearns did, arriving first at the finish, one hour and five minutes ahead of the schedule. Many of the cars had difficulty in covering the ground in schedule time because of the frightful condition of the highways.

After the initial misfortune, which was in no way chargeable to the car, it ran beautifully, covering much of the distance



CROSSING AN OLD-TIME BRIDGE OVER A HALF-FROZEN STREAM WEST OF HARRISBURG, PA.

glaring ice, or else a sheet of ice covered by a think blanket of snow, making it very deceiving and exasperating to the driver and a matter of extreme difficulty to properly guide the car. The machine was in charge of Joe Brown and Walter Evans, two of the Autocar Company's most experienced drivers, and with Mr. Brand and Mr. Gillis was H. A. Cole, one of the company's engineers.

Everything was plain sailing until near Metuchen, when rounding a short curve a glassy sheet of ice was struck, causing the car to skid the width of the road and leap through the air into a brush hedge, through which it tore its way, finally settling in a snow drift

able, as the car, besides having been subjected to many heavy jolts and knocks, had rested in a deep snow drift for two hours. Not a piece of metal or bit of wood was found to have been injured in any way.

A Hard Run

The almost impassable roads encountered by the contestants in the endurance run from Philadelphia to Harrisburg and return on Jan. 1st and 2d are now famous for the difficulties they presented to motor travel, in view of which the performance of the Stearns car stands out as one of exceptional merit.

A stoppage in the carbureter deprived the car of the privilege of making a clean

at a speed between fifty and sixty miles per hour. The rough usage did not injure the car in any way, it being in perfect order and adjustment at the end of the interesting trip.

It is such performances as these even more than the technical points scored in the contests that prove the ability of an automobile to give satisfactory service.

Designers of automobiles appreciate the necessity of making all parts of the machinery accessible if one can judge from the 1907 catalogues. This is well, as the "genus homo" is increasing his ranks every day. It was high time that this change was made, for many old cars were very inconvenient.



A Matter of Degree

There was a young lady in Tyre
Named Mirabelle Margaret McGwyré.

Every friend that she knew
Would say, "Margy, skid-DO!"
But her town was a non-skidding Tyre.

Coal of the World

The amount of coal which is mined in the various countries of the world only lacks about three-quarters of a million of being one full billion tons. Taking a ton of coal as occupying 40 cubic feet, the pile which the amount of the world's coal output for 1905, would make a cubic pile more than 3-5ths of a mile wide, long and high. The comparative figures as given by *Technical Literature* are as follows:

"The latest statistics available of the coal production of the world in 1905 put the total at 929,623,000 tons, as compared with 867,021,000 tons in 1904, or an increase of 7¼ per cent. Most of the producing countries share in the advance, the notable exceptions being Belgium and Russia. The greatest gain was exhibited by the United States, whose output has jumped from 318,276,000 to 352,694,000 tons, or a rise of 6¼ per cent. America is now by far the largest producer, though the United Kingdom is a close second and still remains the largest exporter. The production of the United Kingdom, according to British official figures, was 239,889,000, as against 236,147,000 tons, or an advance of 1½ per cent. Germany, the third largest producer, mined 173,664,000 tons, as against 169,448,000 tons, or a gain of 2½ per cent. The output of India increased from 7,682,000 to 7,921,000 tons, and of Japan from 11,600,000 to 11,895,000 tons. Austria-Hungary's total is 40,725,000, as compared with 40,335,000 tons, and France's contribution is 36,048,000, as against 34,502,000 tons. The yield of Canada has grown from 6,814,000 to 7,959,000 tons, and of South America from 3,015,000 to 3,210,000 tons, and France's contribution is 36,320,000 tons. The production of America from 3,015,000 to 3,219,000 to 21,844,000 tons, and of Russia from 19,318,000 to 17,120,000 tons. reasons for the latter being obvious."

Safe Investments

Alarming capital is considered a very indifferent matter by the spouters at labor meetings who want to prevent the paying of rents and dividends; alarming capital is a small matter to the demagogues, who are strong in season and out of season to cut down the earnings of railroads; but it is a serious matter when the people whose capital has been carrying on public enterprises decide to make more use of the safe deposit vaults. It is bad for the health of the nation when people possessing money conclude that safe deposit vaults, United States bonds and hidden stockings are safer forms of investment than enterprises that keep the wheels of progress humming.

All the automobile shows this year have proven beyond doubt the coming popularity of high-speed runabouts. Cars varying in speed from 40 to as high as 90 miles an hour are on the market, modeled in many cases after Vanderbilt Cup racers. The Haynes people have put a runabout on their 50 H.-P. model, which has the same chassis that did so well in the Vanderbilt Cup race. The model is low and rakish, and in fact is identical with the car in the race, except for the addition of a muffler and a few comforts for the riders. With its regular touring body this car is very fast, but with the light weight of the runabout body it will go faster than almost anyone would dare drive it.

Colored Gentleman on a Rampage

During the progress of a fire at L street, in Washington, D. C., last month, a Maxwell car figured in a rather unique incident.

The car, in the hands of an inexperienced negro driver accompanied by two friends, succeeded in passing over the hose laid in the street, and ultimately colliding with one of the trucks of the fire department, seriously damaging it, and putting three heavy scaling ladders out of commission.

At the hearing, it appeared that Thomas Williams, the driver, was an automobile washer at the garage of the Maxwell-Brisco Motor Company. After his arraignment, the judge imposed \$10 fine for driving over the hose of the fire department, \$30 for driving the machine while in an intoxicated condition, and for driving without the consent of the owner, and \$40 for colliding with the fire department truck.

The pleasing feature of the incident for the Maxwell people was that while the fire department stated that more than \$50 damage had been done its truck and equipment, the automobile was uninjured.

Training Automobile Repairers

Automobiling is developing a great many workmen who call themselves machinists, but are in reality merely handy shop men. These men are called to do numerous jobs for which they have had no training, and they sometimes meet with painful experiences. If they are the right sort they develop into first-class mechanics; if they have no natural capacity in that direction they make indifferent chauffeurs.

People taking long automobile tours sometimes find automobile repair shops whose principal machines are a vise and a pipe wrench. Yet the people in such places sometimes do wonderfully good work, considering their facilities. Many of the country garage workmen are like an engineer of a river steamer in the olden days whose vacuum gauge broke. That did not embarrass the engineer. He used his hand to feel the heat of the condenser, and went home as if nothing had happened to the vacuum gauge.

Liked to Select Her Company

A fat Irishwoman, bearing a number of bundles, entered a crowded street car. The only semblance of a seat she could find was a small space at the right of a smartly dressed youth. Into this space, sufficient only for an individual of ordinary size, the fleshy Irishwoman squeezed herself, much to the annoyance of the youth.

After a moment or so the Irishwoman produced a cheese sandwich, which she proceeded to devour with every evidence of relish.

At this the youth gave her a look of ineffable disgust and drew the skirts of his frock coat closer to him.

"I suppose, me lad," good-naturedly said the woman, "that ye'd prayfer-r to have a gentleman sittin' nixt to ye."

"I certainly would!" snapped the youngster.

"So would I," calmly responded the fat person.

A party of automobile enthusiasts are touring France in a six-cylinder Hotchkiss car. Archer & Co., 1597 Broadway, New York, inform us that the trip will extend over 10,000 kilometers (6,200 miles). We are promised a detailed story of the trip, with illustrations.

National Automobile Shows to be Held Earlier

It has been definitely stated that the Madison Square Garden Automobile Show will take place early in November.

The eighth annual automobile show at Chicago will be held at the Coliseum and the First Regiment Armory November 30 to December 7, as usual under the auspices of the National Association of Automobile Manufacturers, Inc.

Of Personal Interest

Mr. A. B. Tucker has resigned as secretary of the New York Motor Club.

Mr. E. R. Thomas, of Buffalo, N. Y., left last month on a vacation trip to Florida.

Mr. and Mrs. William E. Carter, of Bryn Mawr, Pa., will tour Europe in a Mercedes.

Mr. Arthur Watson has been appointed sales manager of the Hartford Suspension Company.

Mr. James W. Ward has joined the forces of the Motor Car Company of New Jersey as salesman.

Mr. A. H. Chadbourne has resigned from the Pullman interests to organize a new industrial enterprise.

Mr. J. E. Yowell has been appointed manager of the Southern Automobile Company, of Nashville, Tenn.

Mr. P. H. Seery, president of the Motor Car Company of New Jersey, recently returned from a trip to Florida.

Mr. F. L. Bartlett, president of the Denver (Col.) Automobile Club, has purchased a forty-five horsepower Aerocar.

Mr. Charles Weber has succeeded Al Reeke as secretary-treasurer of the Orlando F. Weber Company, of Chicago, Ill.

One of the most recent purchasers of a Thomas Flyer is O. F. Thomas, a cousin of E. R. Thomas, the New York banker.

Judge W. H. Hotchkiss, president of the A. A. A., has just made his choice of a Thomas Forty touring car for use during 1907.

Mr. and Mrs. Richard Berridge, of Haverford, Pa., will tour England and Ireland and the Continent in a Mercedes touring car.

Mr. S. B. Stevens, president of the New York Motor Club, has ordered a 50 horsepower Rolls-Royce car from Walter C. Martin.

Mr. William Vey, who was formerly with Herbert Austin, has accepted a position with the Essex Automobile Company of Newark, N. J.

Mr. Robert Edeson, star of "Strongheart," recently placed an order for a Thomas Flyer with which he will tour in Europe this summer.

Mr. Carl Hirsch, of Constance, Baden, Germany, has purchased a Rambler Model 15, which he will drive in the Herkomer tour in Europe next June.

Mr. W. W. Metzger has joined the forces of the Maxwell-Briscoe-Chase Co., Chicago, and is in charge of the electric vehicle department.

F. H. Mellon, of Pittsburgh, one of the most enthusiastic motorists in this country, drove his Columbia touring car more than 14,000 miles last season.

Mr. Albert C. Bostwick, the pioneer motorist, will tour Europe this summer



A THOMAS FLYER CLIMBING VIADUCT HILL WITH TWELVE PASSENGERS ON BOARD, AND THE ROAD COVERED WITH SIX INCHES OF SNOW.

in a 45 horse power Peerless runabout, fitted with a special enclosed body.

Mr. Charles H. Perkins has joined the selling force of the National, Wayne and Reo cars for the Linscott Motor Company, of Boston, Mass.

Mr. George Lautenschlager, of Toledo, O., has taken charge of the repair department of the American Automobile Company, at Pittsburg, Pa.

Mr. A. F. Clark, formerly in the electrical business in Philadelphia, has started a factory in Cleveland, Ohio, for the manufacture of electric vehicles.

Mr. A. D. Caldwell has connected himself with the Atwood Garage, of

Toledo, Ohio. Mr. Caldwell was formerly with the Pennsylvania Rubber Company.

Mrs. Archer Huntington, of New York City, has purchased a 35-horsepower Panhard car to be shipped to Europe to be used in a tour of England and France.

Mr. John W. Haynes has accepted the position of sales manager of the A. L. Kull Automobile Company, metropolitan agents for the Wayne and Dragon cars.

Hubert Le Blon, who drove Charles A. Coey's Thomas car in the Vanderbilt Cup Race, will drive a Panhard in the Grand Prix, which will be run next July in Normandy.

Congressman Martin B. Madden, of Chicago, sailed from New York last month for a protracted automobile tour of Europe. He is accompanied by Mrs. Madden and Miss Madden.

Mr. Charles Edward Putnam, of Worcester, Mass., has become connected with the selling forces of the H. T. Kimball Company of Boston, and is meeting with considerable success.

Mr. Victor J. Humbrecht, a well known Philadelphian, has left for Florida. He had his 4 cylinder 30 horse power Cadillac touring car shipped ahead to use while there.

Mr. Walter C. Martin, proprietor of the Cadillac Company, of New York, has been appointed American agent of C. S. Rolls Company, of London, makers of the Rolls-Royce cars.

Mr. Joseph S. Bunting, secretary and treasurer of the Smith & Mabley Mfg. Company, will make his headquarters in Philadelphia, in charge of the firm of Smith & Mabley, of Pennsylvania.

Mr. Fred M. Hoblitt has severed his connection with the Aerocar Company to join the sales department of the American Locomotive Automobile Company, makers of the Berliet car.

Mr. James G. Heaslett, formerly connected with the Garford Company, of Elyria, Ohio, has accepted a position with the Ranier Company, of New York, as chief engineer and designer.

Mr. George W. Kyle has accepted a position with the Welch Motor Car Company. Mr. Kyle was formerly in charge of the repair and order department of the Maxwell-Briscoe Motor Company.

Mr. O. P. Letchworth, of Buffalo, N. Y., has purchased a silver-plated Thomas Flyer, all of the exposed brass parts on the car having been coated with silver, giving it a rather dazzling appearance.

These officers of the Interstate Automobile Clearing Company have been installed: Louis S. Caswell, president; James Geary, vice-president; James M. Carples, secretary, and F. I. Hautman, treasurer.

Mr. H. Y. McMullen has been appointed resident salesman of the Detroit branch of the Pennsylvania Rubber Company, Jeannette, Pa., opened on January 1st, under the management of O. H. Joy.

The first Pope Hartford of the 1907 model to reach Meriden, Conn., has been delivered to Miss Elsie Lyon, of that city. Miss Lyon, who is a capable driver, will operate the machine a good deal herself.

Mr. J. B. Bartholomew, president of the Bartholomew Company, makers of the Glide, returned last month from a three months' trip to South America, which he visited to establish agencies for Glide cars.

Mr. Howard Drakeley, who for a number of years has held the reputation of an expert hockey player, has become the general manager of the New York branch of the Motor Sales Company, 1771 Broadway.

Mr. W. C. Whitehead, who has been connected with various large manufacturing interests for many years, has succeeded Herman Broessel as president of the Smith & Mabley Manufacturing Company.

The Albany Automobile Club have decided to conduct an automobile road race in the early summer. The distance is to be 75 miles and entries are to be received from Albany, Troy, Saratoga, Schenectady and Cohoes.

Mr. H. L. Warner, superintendent and engineer, and a stockholder in the Muncie Auto Parts Company, Muncie, Ind., has retired from the company. Mr. George H. Guthrie succeeds him as superintendent and engineer.

Mr. Lawrence Eakins, who has been for some time associated with the G. & J. Tire Company, has resigned from that company to take charge of the rubber department of the Gibson Automobile Company, of Indianapolis, Ind.

Tsunetaro K. Oguri, of Tokio, Japan, has purchased an American Roadster from Messrs. Pardee & Canary, Chicago, Ill. Mr. Oguri has ordered his car shipped to Japan, and states that he intends touring Europe in his auto.

Mr. Edward Buffum, formerly sales manager of the Consolidated Manufacturing Company, of Toledo, Ohio, has been appointed to a similar position in the Empire State Motor Company, the New York agents for the Craig-Toledo.

Mr. and Mrs. Craig Biddle, of Philadelphia, Pa., left for Paris last month. They will be met at Cherbourg by their new Mercedes car, which will be fully equipped for a long tour. They will go to Aix le Bains, the Riviera, Italy and Switzerland.

Mr. George C. John, sales manager of the St. Louis Car Company, a member of the legislative committee of the American Motor Car Manufacturers' Association, has been appointed on the legislative board of the American Automobile Association.

Mr. M. C. Anderson, manager of the New York Hippodrome, has purchased a 40-horsepower Lozier 1907 limousine. His partner, Mr. Henry Ziegler, has purchased a 60-horsepower limousine car with a touring body, for use in the east the coming summer.

Mr. R. Harry Croninger, who was manager of the Cadillac Company of Illinois, in 1903, and later became sales manager for the Stoddard-Dayton, of Dayton, O., has become appointed sales manager of the Pennsylvania Auto Motor Company, of Philadelphia, Pa.

The Chicago Woman's Motor Club has been organized. The membership list will include territory lying within a radius of fifty miles of Chicago. The following officers were elected: President, Mrs. C. H. Foster; vice-president, Mrs. A. F. Chase; treasurer, Miss Anna M. Andrews; secretary, Mrs. N. I. Boardman.

Among the American tourists abroad are Mr. and Mrs. Theodore Meyers, of New York, in a Panhard Automobile.

They recently arrived at the Winter Palace Hotel, Nice, France. Mr. and Mrs. J. C. King, of New York, in a Fiat automobile, arrived at the Royal Hotel from Genoa.

Mr. T. Howard McGiehan, formerly with the Ranier branch, Pittsburg, has resigned to join the forces of the Colonial Company. He will be in charge of the selling department, and will supervise the Colonial's demonstrations. Mr. McGiehan's headquarters will be in Pittsburg, Pa.

The officers of the Chicago Automobile Trade Association for the coming year will be: President, Joseph F. Gunther; vice-president, Henry Paulman; secretary, Fred E. Dayton; treasurer, Walter L. Githens; directors, Ralph Temple, F. W. Cornish, and Orlando F. Weber.

Mr. Thomas Henderson, vice-president of the Winton Motor Carriage Company, accompanied by Mrs. Henderson, left Cleveland last month on a trip to the Pacific Coast. Going and returning, Mr. Henderson will visit Winton representatives in the larger cities of the West.

Dr. J. W. White, of the University of Pennsylvania, arrived last month with Mrs. White on the steamship Cedric, from Alexandria, Egypt, after having travelled sixteen hundred miles in Europe in an automobile. Dr. White said that in all his journey he had never had a serious breakdown.

Officers of the Colonial Automobile Company, of Pittsburg, have been elected as follows: President, H. W. Klein; secretary, H. N. Miller; treasurer, R. C. Succop. These, with the following, form the board of directors: Max Reinholdt, D. M. Miller, P. H. Mueller and J. H. Shaffer.

Mrs. J. W. Leavitt is probably one of the pioneer automobile drivers of the feminine drivers in San Francisco, Cal. She has driven a Reo runabout ever since the first of these machines arrived in that city, and her ability as a driver is well known to all members of the Automobile Club of California.

At the annual meeting of the Automobile Club of Hudson County, Jersey City, N. J., the following officers were elected for the coming year: President, J. V. Z. Anthony; vice-president, John P. Landrine; board of governors, J. H. Edwards, H. T. Pond, Herbert Scott, E. M. Dixon, Dr. L. A. Opdyke.

Manager Robbins, of the Aerocar Company, New York, drove over to Newark recently and closed an agency agreement with the New Jersey Automobile Company for Newark and vicinity, and also delivered them their first demonstrating car.

Mr. David Henderson, of Coney Island, has purchased a 50-horsepower Matheson touring car. Other recent purchasers of Matheson cars are C. W. Hall, of Yale University, 50-h. p. touring car; L. H. Greene, 50-h. p. touring car; Emanuel Gonzola, 50-h. p. touring car; D. T. Leahy, 50-h. p. touring car, and L. C. Trehau and J. L. Trehau each a 50-h. p. touring car.

At a meeting of the Chauffeurs' Club of Maryland, the following officers were elected: William Stephenson, president; A. R. Qualey, first vice-president; Frank Chapiat, second vice-president; Thomas B. Wehland, secretary and treasurer. Board of governors: William Stephenson, William Thornberg, J. M. Harris and W. P. Carter.

The graduates of the West Side Y. M. C. A., New York City, have organized an automobile club with fifty members. The officers are: President, C. F. Clarkson; vice-president, Edgar B. Benjamin; secretary, A. B. Cummings; treasurer, Harry D. Munier. Executive committee, George Childs, Duncan Ross, Arthur Hughes, and W. H. Britigan.

Motor cars are very popular with physicians. Dr. Charles A. Groves, of East Orange, N. J., recently purchased a Mitchell runabout; Dr. Sanford Ferris, of Newark, N. J., bought a Ford runabout, and Dr. W. S. Flower, of Pittsburg, Pa., did the same. Dr. Hammell, of Chatham, N. J., has lately become the owner of a Maxwell touring car.

Mr. F. C. Donald has been elected president of the Chicago Motor Club to succeed W. H. Arthur, who resigned on account of the pressure of other business. Mr. Donald, who has been a director of the Motor Club, was president of the Chicago Automobile Club during 1902 and 1903, and officiated as

referee at a number of the big contests last summer.

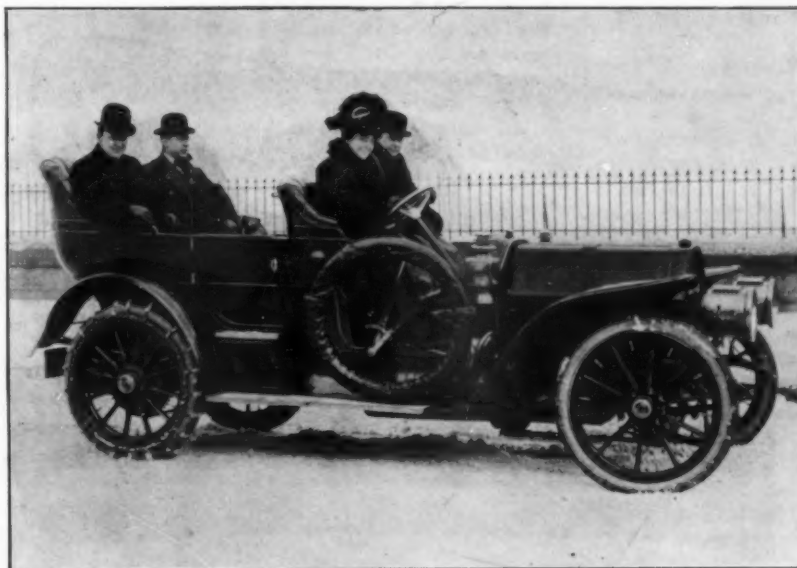
Mr. George W. Close, formerly secretary and treasurer of the Pennsylvania Electric Vehicle Company, is now with W. J. Spankle, of Philadelphia, agent for the Hotchkiss Premier and Reo.

The Rhode Island Automobile Club, of Providence, selected its representatives on the legislative and touring boards of the American Automobile Association, at a recent meeting. Mr. J. Jerome Hahn was named for the legislative board and Mr. Elliott Flint was chosen for the touring board. The club is represented on the racing board by R. Lincoln Lippitt, who was also a member last year.

Mr. F. G. Bremer has been appointed

The Austin Automobile Club, located in a Chicago suburb, is considering changing its name to the West Chicago Automobile Club. The club has selected the following officers for the ensuing year: President, J. H. Francis; first vice-president, C. E. Ingalls; second vice-president, J. E. Flew; secretary, E. C. Westwood; treasurer, John Wayman; counsel, A. J. Redmond; surgeon, Dr. B. A. McBurney.

Last month, George E. Risley, the well known salesman of Columbia cars, addressed the committee of the Connecticut State Legislature on Rivers, Roads and Bridges, now in session at the capitol at Hartford, on the advisability of requiring all vehicles of whatsoever description, whether steel or rubber tired, to display a light at night. This measure has the hearty endorsement of all motorists and indications point to its early enactment.



MISS FLORA ZABELLE (MRS. RAYMOND HITCHCOCK) IN HER 50 H.-P. POPE TOLEDO.

assistant general superintendent of the factory of the Dolson Automobile Company, of Charlotte, Mich. Mr. Bremer comes to them from the American Mercedes Company, of New York, and previous to his association with that company he was with the Pope Toledo Co. He is considered one of the most proficient mechanical experts in the automobile business.

Mrs. George M. Pullman has left Chicago for a trip abroad. She is taking with her a large new touring car, fitted with every convenience and luxury that can render traveling a delight. Mrs. Pullman is accompanied by Mrs. and Miss Fynes of New York. The party will tour France, Germany, Switzerland, and arrive in Rome just after Easter. From there they will go to Portugal, and perhaps England.

In these days when challenges are flying around so abundantly, Frank Fanning, of the Haynes Automobile Company, calls attention to the fact that most of these machines are telling what they *may* do. He says he is willing to let the Haynes record for speed, regularity and reliability rest upon the showing it made in the last Vanderbilt cup race. The fact that a stock car was able to make the wonderful exhibition which the Haynes

did, against foreign and American machines of double and more its horse power, he thinks speaks for itself.

W. M. Botto, general sales manager of the Matheson Company, says:

I have had so many demands for 1907 Mathesons from Europe that I shall leave for the other side early in April. I shall tour the Continent in a seven-passenger touring car, visiting all of the large cities, where I shall complete the arrangements already made for handling our products, both pleasure vehicles and trucks. I shall then proceed to South Africa, Russia, China and Japan, returning by the way of California. In each country demonstrations will be given.

Ex-President Grover Cleveland is said to have bought an automobile. We

do not know what kind it is, but one thing may be relied upon, there will be no swearing when the car stops in a snow storm on a roasting hot July day and refuses to budge. Mr. Cleveland has developed patience in fishing that will stand him in good stead with a balky automobile. When he is out on a fishing trip it is said that Mr. Cleveland will sit all day at the spot selected and never utter a cuss word when there from morn to dewy eve without getting a nibble. That is the kind of person to keep up the character of an automobile.

The Albany Automobile Club has elected the following new members: Joseph R. Swan, George Stevenson, Charles P. Boland, Troy; Ludlow Melius, J. J. O'Neill, James S. Grady, William M. Igo, Albert L. Judson, Harry Nutter. The touring committee for 1907 has been appointed, the president selecting the following: J. B. Taylor, chairman; John P. Randerson, M. L. Ryder, E. W. Leahy, Allan A. Golmour. The tour will be made in June to Atlantic City, via New York and Asbury Park. The date will be announced later.

Smith & Mabley, Inc., report the following March sales: W. L. Hurd, 50-h. p. Simplex-Limousine; R. R. McCormick, Jr., 50-h. p. Simplex Touring car; G. G. Paul, 30-h. p. Simplex Touring car; James Phillips, Jr., 35-h. p. Isotta Fraschini Limousine; T. H. Given, 30-h. p. Simplex runabout; W. W. Woodruff, 30-h. p. Simplex Limousine; C. G. Zug, 30-h. p. Simplex Touring car; Emanuel H. Wallach, 30-h. p. Simplex runabout; O. E. Babcock, 35-h. p. Isotta Fraschini Touring car; E. Francis Riggs, 35-h. p. Isotta Fraschini Landulet; Gen. Horace Porter, 20-30 Renault Limousine, and L. Meyer, 35-h. p. Isotta Fraschini Touring car.

The membership committee of the Automobile Club of Buffalo held a meeting last month and elected twenty-five new members as follows: Duncan McLeod, Albert C. Spann, Robert Vellacott, A. J. Sangster, Frank Barrett, Geo. A. Williston, Marschall E. Reid, Riley Pratt, F. G. Crone, H. G. Moore, E. G. Lane, Robert S. Cox, John W. Henry, Allen Mosher, 2d, J. Wright Beach, Frank V. E. Bardol, Garrett C. Brown, Edward J. Meyer, Irving W. Daw, J. R. Weld, Marshall Clinton, all of Buffalo, and H. A. Francis, Niagara Falls, N. Y.; E. Knapp, G. F. Thompson, Middleport, N. Y.; Peter S. Steenstrup, Newark, N. J.

The following names have been proposed for active membership in the Automobile Club of America: George Blumenthal, New York City; Austen

Colgate, Orange, N. J.; E. C. Converse, New York City; Andrew Fletcher, Hoboken, N. J.; G. G. Frelinghuysen, New York City; Frederick C. Gilsey, New York City; Joe Herrmann, New York City; John S. Huyler, New York City; Benjamin B. Lawrence, New York City; John O. H. Pitney, Morristown, N. J.; Herbert L. Pratt, Brooklyn, N. Y.; Joseph G. Robin, New York City; Elmer A. Sheets, Yonkers, N. Y.; W. L. Sutphin, New York City; Isaac Untermeyer, New York City; E. L. Young, Jersey City, N. J. For associate membership: Mr. Stanford L. Haynes, Springfield, Mass.

In an interview regarding the air-cooled situation, Arthur H. Robbins, manager of the New York branch of the Aerocar Company, said: "The recent cold-air test of the Aerocar convinces me that its adaptability opens the way for automobiles of this type to become aidful in the exploration of the antarctic regions. Dr. Cook, the great explorer, himself has stated that the practicability of running automobiles over land to the South Pole can be accepted as no dream of the optimist, but a reality, if the cars are air-cooled. We find upon investigation that the Aerocar is so constructed that it would in all probability be among the first to enjoy the distinction of reaching the South Pole if the highways were made traversable. In all the tests to which the Aerocar has been put it has proved itself, and has always withstood the most crucial trials."

Mr. H. A. Gillis, second vice-president and general manager, has installed a system of inspection and organization in the "Autocar" factory which is identical with that used by him while in charge of the American Locomotive Company, at Richmond, Virginia.

Raw stock and metals in the rough are tested and inspected upon delivery, and continuing through their various processes, to the machine where they are wrought into their various shapes, every detail is always under the eye of an inspector.

Each motor is given a dynamo test and must develop and maintain its rated horse power for a number of hours.

Every car is driven at least one hundred miles and after completing this test is given a dynamo on the rear wheels to show the car delivers the required motor power to the rims of the rear wheels.

President Hotchkiss of the American Automobile Association recently announced the full membership of the

good roads board for 1907, as follows: John Farson, Chicago, Ill.; Augustus Post, New York City, N. Y.; W. P. Murray, Cleveland, Ohio; E. Kneeland, Pittsburg, Pa.; William T. White, Trenton, N. J.; H. H. Trice, Norfolk, Va.; C. Gordon Neff, Cincinnati, O.; John M. Satterfield, Buffalo, N. Y.; Frank X. Mudd, Chicago, Ill.; W. R. B. Whittier, Atlanta, Ga.; W. H. Chase, Leominster, Mass.; Henry G. Strong, Rochester, N. Y.; Arthur Stein, Cincinnati, O.; Walter E. Edge, Atlantic City, N. J.; R. A. Whitney, Peoria, Ill.; William Neil, Columbus, O.; B. Clinton Slagle, Baltimore, Md.; F. A. Burrell, New York, N. Y.; Joseph H. Wood, Orange, N. J.; A. E. Demange, Bloomington, Ill.; Daniel P. Ray, Olean, N. Y.; G. K. Wheeler, Kansas City, Mo.; S. W. Kent Miller, Hagerstown, Md.; George H. West, Detroit, Mich.; Palmer Abbott, New Orleans, La.; George M. Palmer, Mankato, Minn.; C. Roy McCanna, Burlington, Wis.; A. G. Widmer, Seymour, Ia.; Ben Weille, Paducah, Ky.; Dr. F. L. Bartlett, Denver, Col.; A. J. Smith, Los Angeles, Cal.

Prest-O-Lite Announcement

Important to Manufacturers, Dealers and Owners of Prest-O-Lite Gas Tanks.

Pumping Stations.

New York: Our new pumping station at Harrison, N. J., is now in operation. Also our Home Office for all Eastern business is now open at 1904 Broadway, between 63d and 64th streets.

Boston: Boston plant is in full swing and will supply the New England trade. Boston Office, No. 541 Tremont street.

Toronto: Toronto, Canada, Pumping Station (in connection with the Commercial Acetylene Plant) will supply Canada. Office of the Prest-O-Lite Co. of Canada, No. 6 King street west.

San Francisco: Point Richmond, Cal., Plant (across the bay from San Francisco) will supply all Western coast trade. Office, Point Richmond, Cal.

Indianapolis: Indianapolis factory and pumping plant will supply all central State trade. Office No. 24 South East street.

We have on hand now at each of our pumping stations from six hundred to two thousand extra tanks from which we can make immediate shipments to agents or manufacturers, and for the entire season of 1907 we can supply our trade without a minute's delay on either new tanks or recharges.

THE PREST-O-LITE CO.

The presence of Herbert H. Little in New York has led to the rumor that this well known race driver of the Pope Company is preparing for a record run out of the city in a 1907 Pope-Toledo car.

Garage Notes

The Centaur Motor Car Company, of Buffalo, N. Y., will sell the Autocar.

Levey Brothers, of Houston, Tex., are building a new brick garage on Travis street.

The firm of Banker Brothers, Pittsburg, Pa., have taken up the agency for the Autocar.

Mr. L. A. Riehmann has taken control of the Rambler garage on Sheridan Road, Chicago, Ohio.

A garage will soon be opened by John Field on Broad street, near Jefferson avenue, Columbus, Ohio.

Mr. F. S. Howell, of Grand Rapids, Mich., is erecting a garage on Jefferson avenue for George Metz.

The Eclipse Automobile & Construction Company have opened a large garage in Williamsburg, N. Y.

Messrs. Ellis & Edwards, of Rochester, Minn., are preparing to open a garage on Broadway in that city.

The E. R. Cumbe Company, of Denver, Col., have moved into a new garage at 1541-1547 Cleveland Place.

A contract has been closed with F. Cuillery, of Paris, for the agency for Ford cars for France and Switzerland.

The National Garage Company, of Seattle, Wash., have established their business at Ninth and Howell streets.

Mr. Frank Place, of Flushing, L. I., will soon erect a garage on the North Road. The building will be 50 by 50 feet.

Messrs. Sears & Burgess have assumed control of the St. Louis car agency at 1229 Michigan avenue, Chicago, Ill.

Mr. F. E. Kendall recently opened a garage at 115 North Main street, Austin, Minn. He will sell, repair and rent cars.

Mr. Robert L. Fee will build a new garage on property which he recently purchased on Jefferson avenue, Detroit, Mich.

The Indiana Automobile Company, of Indianapolis, Ind., have arranged for

the 1907 agency for the Pope-Hartford in Indiana.

Mr. C. C. Jones, of Omaha, Neb., has rented the large store room in the Penner Block, and will open an up-to-date garage.

The Rauch & Lang Carriage Company, of Cleveland, Ohio, have increased their capital stock from \$75,000 to \$250,000.

The Maxwell Briscoe Motor Company, of Tarrytown, N. Y., have increased their capital stock from \$500,000 to \$1,500,000.

The Garfield Park Auto Garage, of 1891 West Harrison street, Chicago,



Ill., have closed for the agency of the Detroit in Chicago.

Mr. A. C. Thompson is erecting a one-story garage of cement block construction on Park avenue, near Fifth street, Plainfield, N. J.

The McDuffee Automobile Company, of Chicago, Ill., will shortly move into their new branch salesrooms and garage in Milwaukee, Wis.

J. H. Bates & Son, Woburn, Mass., are erecting a one story brick garage on Montvale avenue, which will have a floor space 60 by 90 feet.

The Bazille Automobile Company are having a garage erected at 15 East Ninth street, St. Paul, Minn. The dimensions are 150 by 50 feet.

The Bristol Automobile Company will build a garage at Platts Mills, Conn. It will be of frame construction, one story high, 50 by 60 feet.

The East Liberty Automobile Company of Pittsburg, Pa., expect to be able to occupy their new garage, now in course of erection, by April 1st.

Mr. Charles P. Schuler, of Baltimore, Md., has opened up the Monumental Garage at 1002 Morton street. He has the agency for the Maxwell cars.

Mr. James Morley, of Los Angeles, Cal., is going into the automobile business. Part of his skating rink will be turned into a garage and salesroom.

Mr. W. G. Bell, of the Chicago Automobile Garage Company, 3210 North Clark street, has taken the Columbus electric agency for the North Side.

Mr. John T. Fisher, formerly with the De Luxe Company, has opened a Chicago branch for the Mercedes Import Company, at 319 Michigan avenue.

Mr. Ezra Kirk, who recently resigned as sales manager of the Thomas companies, has opened a garage in Toledo, Ohio, in partnership with his brother.

Paul de La Chesnage has secured the exclusive American agency for Züst automobiles built in Milan, Italy. He will open salesrooms in Automobile row.

Mr. B. C. Lillard, of Galena, Mo., has been awarded the contract for the erection of an automobile garage to be erected at Main and Ninth streets, by B. Cooley.

Mr. Volney P. Kinney, of Buffalo, N. Y., is to build a two-story brick garage at a cost of \$14,500. The location of the garage will be at Nos. 1114-1118 Main street.

A large addition has been made by the Matheson Company to its quarters on Broadway. The new space will be used exclusively as a machine shop and equipment station.

The private garage of Mr. A. L. Chamberlain, on Lenox street, Fair Haven, Conn., is nearly finished. It is

a two-story structure 24 by 28 feet, and will cost \$3,000.

A garage has been opened by G. H. Miller on Garey avenue, near Second street, Pomona, Cal. The garage occupies a space of 65 by 65 feet in a newly erected business block.

Mr. Harry W. Bogen, Pacific Coast agent for the Continental Tire Company, has established a branch house in Los Angeles, and intends to start stores in Portland and Seattle.

Messrs. Minor & Cohen, of Portland, Ore., are erecting a new garage in that city. The floor space will be 50 by 100 feet, and the repair shop and sales-room will be separate.

The Chicago Auto Car Co., Portland, Me., have been organized with a capital of \$2,000,000. President, J. E. Manter; treasurer, C. D. Fullerton; clerk, M. W. Baldwin, all of Portland.

The Robertson Motor Car Company, of Taunton, Mass., have organized. The capital is \$25,000, and the incorporators are J. W. Robertson, president; A. M. Robertson, treasurer and clerk.

A charter has been granted to the Novelty Motor Company, Seattle, Wash., with a capital stock of \$10,000. The incorporators are C. M. Smith, G. W. Coover, and H. G. Smith.

The Everglade Automobile Company have organized at St. Petersburg, Fla., with W. K. Cleveland, president; F. E. Miller, vice-president, and A. T. Mullins, secretary and treasurer.

The Mac Farland Powell Auto Company, Denver, Col., have incorporated with a capital stock of \$25,000. The directors are Finlay L. Mac Farland, Fred M. Powell, and James P. Evans.

Mr. Y. Q. Derbab is erecting a fire-proof garage at 212-218 Broad street, Lynn, Mass. The structure will measure 100 by 60 feet, and will afford accommodations for nearly one hundred cars.

New agencies established by the Wayne Automobile Company are as follows: A. F. Solliday, Milwaukee, Wis.; Johnstown Automobile Company, Johnstown, Pa., and P. Pawler, Calumet, Mich.

The Suisun Garage Company, of Suisun, Cal., have filed articles of incorporation. The capital stock is \$10,000. The directors of the company are William Pierce, T. T. Gregory and L. E. Wood.

The Orlando F. Weber Automobile Company have leased the property at 1322 to 1326 Michigan Boulevard, Chicago, Ill., for a term of years. The building is a two-story structure, 60 by 171 feet.

Mr. Isaac Blum, of 261 West Fifty-fourth street, New York, has purchased the four-story dwelling adjoining the club house of the Automobile Club of America, and will convert the building into a garage.

The officials of the Locomobile Company of America, Bridgeport, Conn., are considering a plan of adding a wing to the north side of the factory sufficient for the employment of three hundred more men.

Mr. Albert J. Otto has taken a lease of a garage building adjoining the American Locomotive Company's building, at Broadway and Sixty-second street, and this he will sub-divide as an automobile mart.

A public garage, 22 by 145 feet, is being built by Charles Wenzel, in Huntington, L. I. Concrete blocks will be used in constructing it. The building will be one story high, and is located on New York avenue.

The Lake Avenue Automobile Company, of Cleveland, Ohio, will erect a garage on Lake avenue, N. W., opposite Eighty-fifth street. It will be a one story brick building about 38 feet wide and 150 feet deep.

Work will be rushed on the excavations for the new garage which Mr. W. B. Whitfield is having erected at 143 Park street, New Haven, Conn. The building will be of brick, 50 by 100 feet, and one story high.

The International Automobile Company of Montreal are about to erect a \$40,000 garage on St. Catherine street, and will represent in Canada the Dragon, and for Eastern Canada, the Wayne and the Gale.

Mr. C. G. Henderson is building a one story brick garage on the west side of Fifty-first street, north of Woodland avenue, Philadelphia, Pa. Its dimensions are 47.4 by 139 feet, and the cost will be about \$8,000.

The Hokanson Automobile Company, Madison, Wis., recently filed articles of incorporation. The capital stock is \$21,000, and the incorporators are Rudolph Hokanson, Charles F. Spooner, and Emil Hokanson.

Mr. J. F. McNaughton has removed

from 711 South Spring street to the showroom of the Electrical Construction Company Garage at 126 South Main street, Los Angeles, Cal., where the Mora will be shown.

The Martini Import Company, of New York, have incorporated with \$50,000 capital, to deal in automobiles. The incorporators are P. S. Palmer, J. B. Freeman, New York City, and F. L. Quinby, East Orange, N. J.

The Taylor garage on Orange street, Albany, N. Y., is in process of overhauling preparatory to the rush of the spring trade. It will have new and the most up-to-date equipment in all the essentials for the automobile.

The Park Circle Garage Company, of Brooklyn, N. Y., has been organized with a capital of \$10,000, consisting of shares of \$50 each. The directors are James A. Anderson, Frank L. Haggerty and Frank D. Skeet, of Brooklyn.

The Banker Brothers Company, of Pittsburg, Pa., have rented for three years the building at 335-337 Diamond street, near Wood street, in the heart of the business district, and will fit up the place for their downtown garage.

J. E. & A. L. Pennock, of Philadelphia, Pa., have completed plans for a three story and basement garage to be erected on 216-220 North Broad street. Construction will probably be undertaken as soon as the spring opens.

The Winton people say that there is a tendency abroad to adopt the direct drive on the third speed, as used on the Winton Model M, leaving a higher speed for use where ideal road conditions make extreme speed possible.

The Flagler Company, of Brooklyn, N. Y., have been granted a charter to manufacture and sell vehicles, and also to operate a garage. The capital is \$25,000 and among the directors are A. R. Pardington, F. W. Flagler and C. F. Hart.

The Strathmann Automobile Company, of New York, have organized to deal in automobiles and supplies. Capital \$10,000. The incorporators are Charles Strathmann, E. T. Wood, F. P. Bugbee, and Arthur J. Maher, all of New York.

The Continental Automobile Manufacturing Company, Hartford, Conn., was organized last month with a capital stock of \$100,000. The incorporators are Frank J. Schollhorn, Caldwell S.

Johnson, Constand A. Moeller, and R. le Roy Kantz.

A new three story brick garage is in course of construction at 902 Union street, Brooklyn, N. Y., for the Campbell-Corwin Company, local agents for the de Luxe car. Temporary offices and salesrooms have been opened at 322 Vanderbilt avenue.

The Geneva Automobile Company, of Geneva, N. Y., have begun work of clearing a site for a new garage at Nos. 143 and 145 Castle street. It will be a two-story brick building, 132 feet long and 40 feet wide, and the cost will be about \$8,000.

The Elton Automobile Company have opened their new garage at Spring and East Main streets, Waterbury, Conn. The building has a floor space of 4,200 square feet, and has storing accommodations for about thirty-five cars. The company will handle the Premier and Reo.

Work on the new Winton branch in Pittsburg, Pa., is progressing so rapidly that the building will undoubtedly be ready for occupancy by April 15th. The structure will be one of the largest automobile establishments, and the only manufacturer's branch house in Pittsburg.

Mr. H. P. Neilson, who was for several years associated with E. A. Gilmore in Boston, Mass., has joined forces with Alva Thompson and formed the Metropolitan Auto Company. The new concern is to handle the Moon car, with headquarters at 53 Stanhope street, Boston, Mass.

The Stilson Motor Car Company, Pittsfield, Mass., have just filed articles of incorporation under the laws of Massachusetts. The incorporators are Herbert M. Stilson, James M. Burns, George A. Grounds, Robert E. Stetson and others. The capital stock of the company is \$100,000.

Mr. R. K. Safford, of Springfield, Mass., will erect an up-to-date automobile garage on Worthington street, to be occupied by the E. R. Clark Automobile Company, now located at 117-119 Lyman street. It will be a two story fireproof structure, and one of the finest garages in Western Massachusetts.

The Continental Caoutchouc Co. announce that Messrs. Post & Lester, of Hartford, Conn., have just entered into an important contract with them to act as their distributing agents for Boston and vicinity.

Mr. E. L. Thompson who has had

considerable experience with Continental Tires on account of his association with the Angier Co., has become Boston manager for Messrs. Post & Lester, and it is anticipated that this combination will prove of great benefit both to Continental users and dealers.

Messrs. Post & Lester will carry a large and complete stock of all sizes both in American and Metric measurements.

Alundum

The Norton Company, of Worcester, Mass., have achieved an enviable repu-



tation in their specialty of grinding wheels. Their extensive works at Worcester, Mass., have been found insufficient to keep up with the growing demand for their machines, and an elaborate electric furnace plant for the manufacture of Alundum has been established at Niagara Falls, N. Y. As an abrasive Alundum is said to surpass any other material hitherto in use. This material possesses great hardness and is suited for the bonding of its grains into wheels, thereby securing a product which is accurate and in form homogeneous in structure. The enterprising company have just published a finely printed pamphlet de-

scriptive of the manufacture of Alundum, and perusal of the work will repay all who are interested in grinding machinery.

The 1907 Woodworth Tread has a new method of adjustment: The side wires are made of spring steel and are crimped or wavy in shape so that they are self-adjusting and take up the slack automatically. The covers have short straps along the edges with buckles having hooks on the back to hook over the wires. The adjustment for different size tires is made by adjusting the buckles on the straps at the proper distance from the edge of the cover. The cover can also be tightened by buckling the straps tighter.

Automobilists of New Jersey have been anticipating some more restrictive legislation from the legislature now in session, but the law makers of that State seem to be afraid of making more enemies among horseless carriage people than they have already made. Senator Frelinghuysen, who was chief promoter of the existing law, has been interviewed concerning his intentions and he proved sagely non-committal.

David W. Henry, general traveling representative of the Electric Vehicle Company, has returned from an extensive cross-country trip, the itinerary of which included practically every city of any importance between Hartford and Portland, Oregon. Mr. Henry reports business along the west coast as particularly brisk. While in San Francisco, where he took in the automobile show, he officiated as best man at the wedding of his intimate friend, George E. Middleton, of the Middleton Motor Car Company, Pacific coast representatives of the Columbia line. Mr. Middleton is now touring through lower California in a 45 h. p. Columbia on his honeymoon. Mr. Henry accompanied the newly wedded pair as far as Los Angeles.

C. A. P. writes: Waste rubber is utilized in some way and converted into new material, so to speak. Can you tell me the process of regeneration followed? A.—We think there are several processes followed for converting old rubber into material suitable for mats and such purposes. Old rubber is not used in making tires, air-brake hose or other purposes where strength and durability are important. A German patented system reads: "The rubber is subjected to distillation in an iron vessel over a free fire, with the aid of superheated steam. The lighter oils which come over first are separated from the heavier products. The latter when thickened and vulcanized possess all the good qualities of new rubber."

Extraordinary Run of a Rambler Car

Owing to a difference between himself and the publishers of the Milwaukee Sentinel concerning the character of cars entered for endurance runs, Mr. Van Ezra B. Martin insisted that his Rambler car, which had been in constant use since October, 1904, was capable of making a thousand-mile run without stopping the motor. He was taken at his word and a run was arranged. It took the form of a public event.

The car was started by Sherburne M. Becker, mayor of Milwaukee, at 10 A. M., February 21, and under Mr. Martin's charge started for a tour through the

Chicago and return, and the weather was so cold that Mr. Martin became exhausted at Waukegan and had to leave the car in charge of Dave Smith of Milwaukee, who continued the trip to Chicago.

On this trip was met the only breakage of any sort that occurred during the entire run of the car, the breaking of a spring leaf between Kenosha and Waukegan. The car continued to Waukegan, where, in order to save time, a new spring was put in and the car proceeded to Chicago.

The next day it returned to Milwaukee and was thereafter kept on the roads north and west of Milwaukee until, on Wednesday, February 27th, at 7:06 A. M., the motor stopped through clogging of the



SHERBURNE M. BECKER, THE "BOY MAYOR" OF MILWAUKEE, CRANKING VAN EVRA MARTIN'S RAMBLER CAR FOR ITS NON-STOP RUN, WHICH BEGAN THURSDAY, FEBRUARY 21ST.

lake region north of Milwaukee. The road conditions were the worst possible. Up to within two or three days of the starting of the run there had been several days of warm weather with considerable rain, with the result that the roads were hub deep in mud. A sudden and severe drop in temperature froze the roads in this condition sufficiently to make them practically as hard as so much rock. There were not even clearly defined ruts that could be followed and the car was compelled to bump along over roads like a granite pile. Nevertheless, Mr. Martin announced that he proposed to keep his car on the road not only during the day, but at night as well. The result was that in the first twenty-four hours the mileage aggregated 331. Then the car was sent to

gasoline pipe, the distance covered being 2,002½ miles.

A thorough examination of the car was made after this long run by mechanical engineers of the Armour Institute of Technology, and they found the mechanism very little worn. It was found that replacement of the parts of the engine showing wear would cost, including the time, \$7.60, and that the entire machine, including wheel and transmission gear bearings, could be put in perfect condition, with the exception of paint, finish and tires, at a total cost of well under \$25.00.

A November date for the New York automobile show will, no doubt, prove popular with the manufacturer.

Overdone Write-Ups

Most of the people who have automobiles and accessories to sell try to have long winded descriptions of their devices published in papers and magazines. When a publisher undertakes to illustrate an automobile or any of its parts he is generally importuned to publish descriptive matter sufficient to cover several columns. The longer it is the better from the publicity standpoint. Grave mistakes are made in this form of publicity. An article containing one hundred words or less will be read. An article a column long will be looked through preliminary to reading, and if it does not seem attractive it will be turned down. Articles of two or three columns are nearly always skipped unless the reader has some particular purpose in reading it through.

Turbine Automobile

Many inventors have been struggling for years to produce an explosive gasoline turbine engine, but up to date no satisfactory motor of this type has been produced. Herman Pedersen, of Brooklyn, however, claims to have solved the problem with what he calls the Norsmen turbine engine. The first engine built is thirty-six inches long, eight inches wide and seven inches high. He claims it will develop fifteen horse-power at a speed of 4,000 revolutions per minute, with four explosions to every revolution, and no jarring or evaporation whatever. He claims further that he can make an engine of thirty horse-power that will weigh only between forty-five and fifty pounds, which will give 6,400 revolutions per minute and can be used on automobiles, motor boats or for whatever purpose is required.

The Ideal Tank Works, of Meadville, report business to be remarkably brisk. Many people have decided to prepare for the coming automobile season of activity by providing themselves with a positively safe gasoline tank. The Ideal Tank fills this bill.

The Wilson Automobile Co., 118 St. Lawrence avenue, Wichita, Kansas, and N. E. Peterson, 1520 Belmont avenue, Seattle, Wash., have recently been appointed agents for the Stearns cars.

Aiding the Heathen Chinese

There appears to be some very rich people interested in having Chinamen passed into the United States. Twenty-eight of these people caught coming over the border from Mexico and tried in El Paso, Tex., the other day, were ordered deported. They offered the official interpreter \$7,000 if he would tell the Court a story which would entitle them to remain in this country. A wealthy gang, with headquarters in San Francisco, is engaged in the business of smuggling coolies.

New Jersey Notes and News.

Dr. Edward Hammill, of Chatham, has purchased a Maxwell touring car.

Former Mayor Henry M. Doremus has purchased a four-cylinder Ford runabout.

James Smith, of South Orange, has bought a model G Franklin from the Orange Auto Garage.

The Autovehicle Company has secured an order for a Thomas Flyer from O. M. Mitchell, of Montclair.

Captain Bryant, of Field Battery A, of East Orange, has bought a Thomas 40 horse-power touring car.

Mr. David Young, of Roseville avenue, has purchased a 60-horse Thomas from the Autovehicle Company.

J. Howard Parker, of Newark, has invested in a Stoddard-Dayton touring car from the local agent, J. W. Mason.

Adolph Hensler, of the Hensler Brewing Company, has bought a Thomas runabout from the Autovehicle Company, Newark.

The Maxwell runabout automobile has become as great a favorite in eastern New Jersey as the Cadillac was two or three years ago.

Herbert S. and Joseph H. Gay, of this city, have each placed an order with the Greene Motor Car Company for a Locomobile touring car.

J. W. Ward, who resigned from the Buick agency of Newark, N. J., has taken a position as salesman with the Motor Car Company of New Jersey.

J. H. Livingston, the sub-agent for the Greene Motor Car Company in Hudson County, has taken orders for five Oldsmobiles in Jersey City recently.

The Motor Car Company of New Jersey sold two model G Cadillacs, four Autocar runabouts and four touring cars of that make within the last few days.

A runabout that has attracted much attention in Newark is the 40-horse Thomas of Mr. Leslie P. Ward. This is one of the first Thomas runabouts to arrive here this year.

William Wester, of the A. Goertz Company, this city, and Dr. A. V. Widman, of Clinton avenue, have each purchased a model S Moline from the New Jersey Automobile Company.

E. V. Connett, of South Orange, has ordered a four-cylinder 35-40 Locomobile from the Greene Motor Car Company. The car will be equipped with a Hooker body.

The F. E. Boland Motor Company sold two National cars lately—one, a six-cylinder, to Fred Squire, of Rahway, and the other, a four-cylinder, to John Raymond, of Sewaren.

The New Jersey Automobile Company, of Irvington, has received the first Moline car, which has been sold to Dr. G. Whitman, of 611 Clinton avenue. Charles Wester has also ordered a Moline car.

The Standard Pneumatic Wheel Co., East Orange, has been formed to manu-



facture automobiles, motor, marine engines, machinery, etc.; capital \$200,000. Incorporators: C. O. Geyer, F. C. Ferguson, H. N. Smith, East Orange.

A. H. Humphreville, of the Elmore Automobile Company, of Newark, has received a new three-cylinder Elmore car. Mr. Humphreville went on a trip to Long Island in the machine last month.

H. J. Koehler, Newark, has received his new Corbin demonstrating car. He has also delivered four-cylinder Buick cars to Henry V. Condit, of Jersey City, and G. Seward Foster, of 74 Beech street, East Orange.

J. W. Mason, of Newark, one of the most energetic men in the business, sold two Maxwell runabouts to Charles De H. Brown, of Westhampton Beach, L. I., and one to N. H. Thatcher, of Orange. Another of Mr. Mason's sales of Maxwell runabouts was to G. M. Jeffery, of South Orange.

W. R. Christopher, who has been connected with H. J. Koehler's New York garage, has been transferred to the main branch in Newark, N. J.

Will Form New Concern Here

The Breeze Carbureter Company is being organized for the purpose of taking over the plant of the Breeze Motor Manufacturing Company, of 28 Main street, Newark N. J. The new concern will be capitalized at \$50,000, and proposes to engage extensively in the manufacture of automobile carbureters, which the former concern has been doing for the past two years on a limited scale.

Howard C. Foster, of the Foster Engineering Company, is to be president of the new company, while George Breeze will be secretary and treasurer. Mr. Breeze is the chief owner of the Breeze Motor Manufacturing Company, and holds all of the patents of the concern.

New Jersey Automobile and Motor Club

The regular monthly meeting of the officers and trustees of the New Jersey Automobile and Motor Club was held at the club house, on Monday evening, March 4th, 1907, as reported by Secretary H. A. Bonnell.

Those present were: President Wood, Vice-President Sinclair, Treasurer Coleman, and Messrs. English, Shanley and Fisk.

On account of rumors having been circulated of numerous fines which have been imposed upon automobilists in this State during the past season and not being reported to the Commissioner of Motor Vehicles, it was decided to request the members of the club to notify the president, or secretary, regarding such fines as may have been imposed upon any of them, giving the time, place and name of the Justice, which information will be transmitted to the Commissioner of Motor Vehicles, but the names of the automobilists are to be kept in strict confidence unless permission be given to do otherwise.

A number of applications for membership in the club were received, and after having read off the names, those that were duly approved by the officers and trustees present were declared elected.

Mr. Angus Sinclair having expressed a willingness to donate a \$100 cup to the winner of the Runabout Class at the forthcoming endurance contest, it was

Resolved, That the offer be accepted with thanks and that the conditions which govern the Shanley trophy in the touring car class shall govern the cup to be donated by Mr. Sinclair.

A motion was made by Dr. English,

duly seconded and carried, to the effect that \$100 be donated by the club for the purpose of giving a reception at the club house at the completion of the endurance contest on the evening of June 1st, 1907.

A motion was also made by Dr. English, which was duly seconded and carried, that a sum not to exceed \$250 be appropriated by the club for the purpose of holding a ladies' night at such time and place as the House Committee may elect.

A motion was made to the effect that no special dinner or entertainment be given at the club house, either by Mr. Schweitzer or by members of the club, which would necessitate occupying any room other than the present dining and grill rooms unless permission be first obtained from the president of the club, or the House Committee.

The amount appropriated at the meeting of the officers and trustees held on November 30th, 1906, namely, \$300, for the purpose of installing a range in the kitchen of the club house, being less than the amount for which it was thought at that time such a range could be put in, it was decided to appropriate such additional amount as might be found necessary to pay for the actual cost of the installation.

MEMBERS ELECTED.

The board of trustees elected twenty-eight new members. Those elected to active membership were J. W. Aylsworth, East Orange; Clarence F. Boyd, Newark; William S. Dilworth, Newark; C. W. Doty, New York; E. D. Floyd, Westfield; Charles N. Hart, East Orange; John N. Hines, Montclair; John Huebel, Newark; Robert Lichtenfels, Irvington; Isaac O. Noling, East Orange; Leonard Paulson, Ridgewood; B. W. Richert, New York; A. G. Scherer, Newark; H. W. Suffern, Bloomfield; C. R. Teaboldt, New York, and Louis J. Wurth, Newark. The new associate members are W. M. Aikman, Newark; Elvin W. Cranie, Newark; William A. Duren, Newark; W. M. Jacobus, Passaic; John M. Macdonald, Belleville; Leroy T. McWhiney, Elizabeth; John T. Robb, A. Schraft, F. T. Shoyer, C. Illingworth, William Shields and John Yocum, all of Newark.

Flying Machines of Long Ago

The progress of making machines that rise into the air and are capable of being controlled has been very rapid within the last ten years, but the flying machine appears to remain stationary. Yet attempts to make flying machines have been very numerous. Towards the end of the seventeenth century an inventor of a flying machine had so much confidence in the device that he asked and obtained permission from the king of Scotland to fly from the top of Sterling Castle, which is built on the top of a high precipice. The attempt was made, but the enterprising devotee of science landed on the rocks

beneath badly battered.

An English philosopher of the seventeenth century, who wrote a treatise on mechanics, said that the wings of a bat are most easily imitable. Perhaps nature did by them purposely intend some imitation to direct us in such experiments, that creature being not properly a bird, because not amongst the ovipara, to imply that other creatures are capable of flying as well as birds, and if any should attempt it that would be the best pattern for imitation.

With this encouragement the making of flying machines became common for a few years, but they all ended in failure, and not a few broken bones resulted from the artificial bats descending too rapidly to mother earth.

Skant-Skid

The "Kant-Skid" to be used in mud, snow, slush, sand, on ice or wet pavements consists of strips of chrome leather $1\frac{1}{4}$ inches wide studded with steel rivets placed across the tire about 4 inches apart. A steel plate is rivetted under the studs which protects the leather, making the device very durable. It generally lasts on city streets at least three times as long as the all-metal devices commonly used. The cross strips have rings at each end, these rings being connected by spring steel links which can be snapped into place in one second. The cross strips are made in three lengths: a short length for $2\frac{1}{2}$ " and 3" tires, medium length for $3\frac{1}{2}$ " and 4" tires, and a long length for $4\frac{1}{2}$ " and 5" tires. To make these tires of different wheel diameters it is only necessary to add or remove one or more sections. The spring side links enable one to do this or to put in new cross pieces to replace worn ones without the use of tools in a few seconds' time. The strap for fastening the ends enables one to draw the grips tight without special tools, and provides an adjustable fastening that is simple and cannot become unfastened.

A patent has been applied for relating to certain methods of mixing carbide or acetylene gas with alcohol for the purpose of rendering alcohol more volatile when used as power in internal combustion engines. As one of the drawbacks to alcohol as a power making medium is its deficiency in heat units, it seems strange to mix it with a gas still more deficient in heat. It may turn out, however, that the combination of alcohol and acetylene may establish a mixture which will overcome the difficulty of starting with alcohol when the cylinder is cold.

Men will fight for glory with all its evils, but will not work for glory with all its blessings. The glory of the act is much more stimulating to exertion than consciousness of its usefulness.

The one appeals to our vanity, the other to our sense of duty.

Lovers of the Weed

An Italian prince had strictly forbidden one of his daughters to smoke, but so great a hold had the habit obtained over her that she secretly engaged in the practice at every opportunity. One day she was indulging in a cigarette as she reclined on a balcony attired in a dress of the lightest muslin. Suddenly her father appeared on the scene. In the hurry to hide the evidence of her disobedience the princess placed her hand with the burning cigarette behind her back. The result was startling and tragic—her frock was immediately in a blaze, and she was fearfully burned from head to foot, dying after suffering intensely.

Here is another pathetic smoking incident. An old Hungarian countryman had smoked the same pipe for more than fifty years, and, as a natural consequence, had grown to love it as a companion. One day, however, his infant grandson smashed the pipe beyond all hope of repair. The old man was so broken-hearted at his loss that he hanged himself on a peg. In his pocket was found a scrap of paper on which was scribbled: "My pipe is done for and I must go, too."

There is only one reigning sovereign in Europe who does not smoke at all, and that is King Oscar of Sweden. The greatest smokers are King Edward, who smokes the very best cigars, and King Leopold of Belgium, who smokes not fewer than a dozen cigars a day. The emperor of Austria smokes a pipe morning and evening, but the other sovereigns are contented with cigarettes, the czar consuming about thirty a day.

If the women of America would display half the vigor and energy on behalf of the brutalized children working long hours in mills, factories and mines that they exerted in persecuting Senator Smoot there would soon be changes affected that would bring comfort, relief and happiness to thousands of down-trodden human beings. The leisure class among American women is abnormally large, and they are constantly seen pursuing phantoms to banish crimes. It is a pity that they do not take up the amelioration of helpless children as a pastime. We suppose that such work would fail to bring them sufficiently in the glare of publicity to make it attractive.

The courts will not enforce laws that are not backed by public opinion. That is why there are so many laws relating to automobiles and so little enforcement of them.

THE IDEAL GASOLINE TANK

The Ideal Gasoline Tank is Automatically Self-Ventilating. Understand that the tank is always air-tight; when you draw from the tank you have ventilation; when the faucet is closed the air tube is closed also. One operation opens and closes both the outlet and the Air Tube. When through drawing from tank the air tube is automatically closed and tank positively air-tight. Saves in a few weeks its cost, besides being the only absolutely safe Gasoline Tank made. No. 1 size holds 65 gal. Price \$6.50. Any size made to order. Manufactured only by

IDEAL TANK WORKS

Meadville, Pa.

POCKET BATTERY AMMETER

0 to 30 Amperes

In testing single cells, the cord is not necessary. Accurate.

Price \$3.50

Eldredge Electric Mfg. Co.
Dept. M. SPRINGFIELD, MASS.**USE YOUNG'S Non-Freezing Solution**

for your Radiators and

YOUNGELENE OIL

for your cylinders, and zero weather will not mar your pleasure. Let us give you prices.

O. W. YOUNG

NEWARK, N. J.

TO KEEP THE MOTOR MOTORING, USE DIXON'S MOTOR GRAPHITE

It means best speed, highest efficiency, least wear and noise. Write for free "cool" sample.

JOSEPH DIXON CRUCIBLE CO.

JERSEY CITY, N. J.

**JUST OUT**

The Atlas No. 1 and 2

Will raise any automobile with wheels 22 inches or over.

Height, 10 inches.

Weight, 5 pounds.

Height, 11 1/2 inches.

Weight, 6 pounds.

Can be worked at any angle or in cramped places.

Fits truss brace, round or square axle.

Price, No. 1,

\$2.50

Price, No. 2,

\$3.00

Atlas No. 2.
Patent Applied For.**The U. S. Jack Co.**128 Lake Street, U. S. Jack No. 1
CHICAGO, ILL. Patented July 10, 1906.
Price, \$2.50.**What Papa Feared**

During a thunderstorm a little boy clung to his father and remarked:

"You are not afraid of lightning, papa?"

"No, my son."

"Are you afraid of bears, or bulls, or lions, or tigers?"

"No, my boy, I am not afraid of any of those things."

"Well, papa, it seems to me you are not afraid of anything except mamma."

Motor Car No. 8 on the U. P.

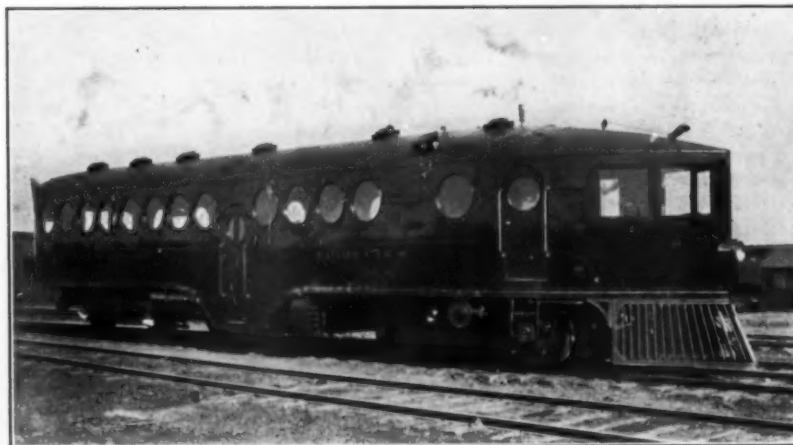
The car body and trucks of Motor Car No. 8 on the Union Pacific, which we here illustrate, are similar in design to those of Motor Car No. 7. The windows of this car are round and equipped with rubber gasket seats, making them absolutely impervious to water, wind and dust. The most advantageous feature of the round window is in the increased strength of the car, the side being in reality a plate girder, the depth being from the car roof to the car sill. The side door entrance adds materially to the comfort of the passengers without in any way weakening the strength of car frame. This door permits of an inside step being used, which avoids the trouble due to the accumulation of ice and snow in the winter, which is usually experienced on outside car steps.

Very few changes have been made in the mechanical transmission on the front

ple, and the economy in the consumption of gasoline and reduced duty on the transmission mechanism is such that the practicability of these cars for every day heavy service is certainly demonstrated. The car weighs 61,000 lbs.

Select Steel for Automobiles

Until automobiles came into use, the parts that called for the greatest strength of steel combined with ductility were boiler plates, bridge links or rods, rails and locomotive tires. The American Railway Master Mechanics' Association standard specification for boiler steel calls for 60,000 pounds per square inch of tensile strength. The elongation in eight inches to be not less than twenty-five per cent. for sheets three-quarters of an inch thick or under. The tensile strength of driving-wheel axles must not be less than 80,000



NEWEST UNION PACIFIC GASOLENE MOTOR CAR.

trucks from that used on the previous cars, except to substitute steel gears in place of bronze. The engine proper was built in Omaha shop, of special design; 10 by 12 cylinders with jump spark ignition and especially designed with liberal bracing and well proportioned parts to avoid a possible chance of breakdown or failure. The engine develops as high as 230 h.p., and handles the car with great ease.

A remarkable advantage gained in this engine is that the car speed is almost entirely controlled by the throttle, the same as a locomotive; even on grades the speed of the car can be varied from 3 to 70 miles an hour by means of throttle and spark levers only, or it can be started on what is known as high speed. The engine is direct connected to the axle, although it is preferable to use the gears in putting the car in motion, but after once in motion the gears are thrown out and the speed of the car entirely controlled by the speed of the engine. This makes the operation of the car very sim-

pounds per square inch with an elongation not less than twenty per cent.

In a series of tests made with steel bridge links the average tensile strength was about 65,000 pounds to the square inch. Krupp steel tires run about 110,000 pounds to the square inch.

Compare these figures with the nickel-chrome used in first-class automobiles for frames, differential, transmission and driving gears for which specifications call for metal having tensile strength varying from 175,000 to 225,000 pounds per square inch. Parts made from select material of this character are very expensive, but it pays to use it when strength, lightness and durability have to be combined.

Gasoline

Stubb—Motorwood said he wanted the strongest automobile made.

Penn—Well, he has it. You can smell his machine a mile.—*San Francisco Chronicle.*

Favoring the Metric System

There exists a spirit of strong opposition in American industrial circles to any change in our weights and measures, the American Society of Mechanical Engineers having taken a strong stand against the introduction of the French metric system. Events, however, are pushing the metric system into many of our workshops. Electric machinery has made thousands of our workmen familiar with the metric system for shop measurement, and automobile makers are working strongly in the same direction. At a recent meeting of the Society of Mechanical Engineers a member remarked:

"I worked for over three years with the metric system, and I found it most simple and convenient. It has been said that quite a number of countries, including France, which are supposed to be using the metric system, do not use it. I have been abroad a good deal, and I have been in several different countries where the metric system is supposed to be used and is used. Summer before last I was in Austria, where it is supposed they do not use the metric system, but I found all the mountain roads and the country roads that I traveled over were measured in kilometers, and Austria is not supposed to be very progressive in that line. I took occasion to ask a number of Austrians whether there was any difficulty in passing from their old system of measurement to the metric system, which they have had for the last fifteen years. They said that they had trouble during the first two or three years, but none after that, and now the old system is practically forgotten. This reminds me of my own experience in Paris about thirty years ago, where the fruit women pushing carts in the streets would sell you grapes or cherries by the *livre* or half-kilo, and take pay in *sous* or centimes as you wished.

Unfair Treatment to Leading Men

It is gratifying to find that the rise of prices due to the prevailing prosperity is moving most employers of labor to increase the wages of their help. In most cases we observe, however, that men in clerical positions and those having charge of factory, shop and office operation are left as they were. People of this class, who sometimes hold positions that materially affect the cost of production or maintenance, receive less consideration on pay-day than good workmen. We do not begrudge the pay first-class workmen receive, but the men who have charge of them ought to receive more consideration. When superintendents, foremen, gang bosses and office clerks form a strong union they will receive more justice than what is now accorded to them, for it is to their management that the success of the business is due.

Knox Failed to Patronize Knox

Senator Knox had an annoying experience during the cold weather with a French automobile, of which the Senator is the proud owner. He had been visiting the White House at Washington and lingered too long with the President, his car waiting in the cold. When the Senator returned to the automobile the most strenuous efforts of the French chauffeur, emphasized with strange oaths, failed to put the car into motion. It was frozen solid.

Now, if Senator Knox had been the owner of a Knox waterless car he might have remained all night in the White House and the car would have been ready for business on receiving the first actuating twist. Senator Knox ought to patronize his namesake for his own comfort in climes where icy breezes blow.

The makers of the Royal Motor Car Company have followed a sensible policy that might well be imitated by many other motor car makers. They have adhered from almost the beginning of their career to the engine design decided upon and have refrained from making changes. This is not only a great advantage to the manufacturer; it saves users no end of unnecessary delays and mistakes in ordering parts.

A correspondent writes us that he has been plugging along all winter in New Jersey through mud, post bound, rutty roads and through snow and ice; but his Traction Tread tires stand up so well that he is beginning to forget that tire trouble ever vexed the soul of an automobilist.

Very good lawyers believe that under the common law it is an act of theft for any person to use an automobile without permission of the owner. The Automobile Owners' Association of Massachusetts are determined to be doubly certain on this point, for they intend urging the legislature to make it a criminal offence for any chauffeur or other person to take or use an automobile without the consent of the owner or of one having authority.

A preacher who was giving a popular sermon telling about things that had been done in the world asserted that William Lymington built the first steamboat and sent her puffing and whistling along the Forth & Clyde Canal in 1802. We expect William used his mouth to do the whistling since the steam whistle was not invented for many years after that time.

Automobile shows are becoming a nuisance. Every small town that can collect half a dozen automobiles think that they are entitled to have a show to collect some money on the side for the benefit of the leisure inhabitants.



The "full jewelled"
Corbin is distinctly
the best \$2500 value
in the automobile
world today. ❖ ❖

Corbin Motor Vehicle Corporation

Member Association Licensed Automobile Mfrs.

New Britain - - - Conn.

NEW YORK BRANCH - 1779 Broadway

Wholesale	THE	Retail
Snutsel Auto Supply COMPANY		
1534 Broadway (Times Square), N. Y. City		
Everything for Electrical Ignition		
Sole Agents for B. P. U. Ignition System		
Sole Agents for Myster & Blatge of Paris		
Accessories and Parts		
Selling Agents for N. Y. for Kuschmore Lamps and Searchlights		
Import	It will pay you to inquire Write for Catalog Dept. A. M.	
	Domestic	

AUTO TIRES

New and Second-Hand Tires Always in Stock

RECOVERING and REPAIRING a SPECIALTY
Call or write for price list

Broadway Rubber Tire Works

1900 BROADWAY

Telephone, 5384 Col. NEW YORK CITY

The IGNITION PROBLEM is SOLVED

in the "Lacoste" High Tension Magneto for Jump Spark Ignition

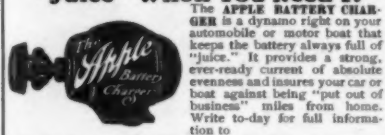
We guarantee this device to be absolutely perfect. We have done the experimenting. No Batteries. No Coil. No Commutator. Everything for Electrical Ignition.

LEON RUBAY, Sole U. S. Agt., 140 W. 38th St., N. Y.



STA-RITE
"STAYS RIGHT THE LONGEST"

Sta-Rite Plugs STAY RIGHT LONGER than all others because they have Double Porcelains, Non-Short circuiting air space, self packing joints, 47 Sizes. Porcelain, \$1.50. Indestructible Mica, \$1.75. Dynamos, Coils, Timers, etc.
THE R. E. HARDY CO., 86 Watts Street, New York City
216 Lake St., Chicago, Ill. E. J. Day & Co., Berkeley, Cal.

"Juice" When You Need It

The Dayton Electrical Mfg. Co., 170 St. Clair St., Dayton, O.

Enterprise Tire Repair Co.

F. HOLLISTER DEARBORN, Mgr.

67 W. 67th St. New York

Vulcanizing of every description.

Re-covering
a specialty.

All work
guaranteed.

W. E. B. SPARK PLUG

Manufactured by

Arc-Spark Mfg. Co.

125 W. 32d Street

NEW YORK

Standard-\$1.50-Metric

Write for

"The Man a-Motoring"

Automobile Tops

For all kinds and
makes of Cars

The "NEVER RUB"
Bow and Top Protectors

Will protect the bows and cloth from
rubbing and wearing

SEND FOR DESCRIPTIVE CIRCULAR

SPRINGFIELD AUTO TOP
& UPHOLSTERING CO.

102-106 Dwight Street
Springfield, Mass.

MENDENHALL'S ROAD MAPS

ROAD MAPS Specially designed and bound in pocket form for the use of Touring Automobilists.
EASTERN—New York State, 75c.; New Jersey, 50c.; Pennsylvania, 50c.; Maryland and Delaware, 75c.
WESTERN—Ohio, 50c.; S.W. Ohio, 50c.; No. Ohio, 50c.; Indiana, 50c.; So. Indiana, 50c.; N.W. Indiana, (just out) 75c.; Illinois, 50c.; Michigan, 50c.; Iowa, 50c.; Missouri, 50c.; Wisconsin, 50c.; Kentucky, 50c.
C. S. MENDENHALL, Publisher, Opera Place, Cincinnati, O.

Useful Flux

The following flux is recommended by French engineers for welding steel and iron or steel to steel. Borax ten parts, sal ammoniac one part, prussiate of potash one part, iron filings free from oxide or rust about one-third of a part. The mixture should be reduced until the mixture becomes a heavy mush. It is placed on a wood fire and stirred. A material of about the appearance of pumice stone is thus produced. It is then pulverized to fine dust and is ready for use. The flux is sprinkled over the metals to be welded when they are at the welding heat.

Working Long to Perfect Chassis

The wisdom of the F. B. Stearns Co. in working steadily from 1896 to 1906 to have one perfect chassis before offering the product to the consumer in quantities has been fully demonstrated, for in the two seasons during which it has been marketed it has promptly classed itself with the finest cars produced in any country, showing a merit in every point of construction that leaves no room to doubt its perfection. Apparently only a few seasons' publicity will be required to make it rank all American cars in reputation, as completely as it now does in material, design and workmanship.

Mechanically speaking, a horse-power is the equivalent of raising 33,000 pounds one foot high in one minute of time, but the expression horse-power is a conventional term convenient for the measurement of work. The actual power of a horse is equivalent to raising 25,000 pounds one foot high in one minute for seven hours of the twenty-four. Since a steam engine will work continuously, it follows that one horse-power of the engine is equal to that of 4.3 flesh-and-blood horses.

Three cars in one family in two years and the first large touring car sale at the Minneapolis Automobile Show is the record that is claimed by Oscar M. Bergstrom, the Aerocar representative at Minneapolis. Last year Mr. Bergstrom sold Mr. Robinson and also Mr. Morse, of Minneapolis, each a model A Aerocar. Right after the opening of the show this week Miss Irene Robinson, a sister of the above gentleman, ordered one of the big model "F" touring cars. This, it is claimed, was the first car to be sold at the show for over \$2,500.

The Dragon Automobile Co. will enter two cars in the Vanderbilt races this year.

CONTENTS.

PAGE.

*Fifth Annual Automobile Show at Boston.	169
*A Great Motor Car Feat by M. Worth Colwell	171
*Requirements of the Modern Chauffeur.	171
Popular Engineering	173
*Automobile and Its Relation to Health, The, by W. L. French.....	176
Information Bureau.....	178
European Notes, News and Comments, by A. F. Sinclair.....	179
To Avoid Accidents.....	180
Cars to Carry Electric Generators.....	181
New Jersey Good Roads.....	181
Torque or Radius Rod.....	182
Strong Metal for Automobiles.....	182
Where has the Cold Chisel Gone?.....	182
Vanadium	182
*Picture Story of Glidden's Tour to Mexico	183
*Patent Office Department.....	184
Auto-Car in Snowstorm.....	185
A Hard Run.....	185
Of Personal Interest.....	187
Garage Notes	191
*Extraordinary Run of a Rambler Car....	194
New Jersey Notes and News.....	195
Kant-Skid	196
*Motor Car No. 8 on the U. P.....	197
Select Steel for Automobiles.....	197
Favoring the Metric System.....	198
An American Car in Germany.....	201
Village Rubbersmith, The.....	203
Curious Ideas About Speed.....	203
Graphite as a Lubricant.....	207

It is the intention of the Automobile Club of America to have a June tour to the Jamestown Exposition, limited to members of the club. The details will be announced shortly, and the route selected will be different from any yet proposed. Chairman Waldron Williams of the runs and tours committee, after consultation with Chairman Robert Lee Morrell of the contest committee, who is a New York State commissioner of the exposition, has about decided upon the Cape Charles route, which means that the run will be from New York to Philadelphia, to Cape Charles, whence ferry would be taken to Norfolk, the cars being carried on a freight transport and the tourists on a regular passenger boat. It is said that a fairly good road exists through the Eastern Shore of Maryland, and arrangements for a stopping place over night will be provided for by sleeping cars located at some point midway between Philadelphia and Cape Charles. The first night's stop would be in Philadelphia, the run there being 106 miles.

Healy Leather Tires

Do not **PUNCTURE**

Do not **SKID**

Do not **RIM-CUT**

Do not **BLOW OUT**

Healy Leather Tire Co.

88-90 Gold Street, New York City

UPTOWN BRANCH

1906 Broadway

Index to Advertisers

PAGE.		PAGE.		PAGE.	
The Aerocar Co.....2d Cover		Gabriel Horn Mfg. Co..... —	Ofeldt Boiler Co..... —		
American Industries 216		Gas, Gasoline and Oil Engines..... —	Oscar Lear Automobile Co..... —		
American Locomotive Auto Co.....3d Cover		Graygood Shock Absorber..... —	Ocean Hotel —		
The American Mercedes..... —					
American Motor League —		Hardy Co., R. E..... 198	Pacific Tucking & Mfg. Co..... —		
Arc-Spark Mfg. Co..... 199		Hartford Suspension Co..... 208	Palmer & Christie..... —		
Auto Club of America..... —		Haynes Automobile Co..... 208	Pierce Co., George N..... —		
Autocar Co..... 210		Healy Leather Tire Co..... 200	Pittsfield Spark Coil Co..... 202		
Autocar Equipment Co..... —		Health Dry-Gas Co..... 211	Pope Mfg. Co..... —		
Auto Chemical & Mfg. Co..... —		Heller, J. S..... —	Portable Buffet Co..... —		
Automobile Institute, The..... —		Homan's Educator —	Practical Gas Engineer..... —		
		Hotel Euclid —			
Badger Mfg. & Supply Co..... 206		Herbert Hungerford 204			
Badger Brass Mfg. Co..... 208			Quinby & Co., J. M..... —		
Billings & Spencer Co..... —					
Book Department 212		Ideal Tank Co..... 197			
Boston Automobile Show..... 140		Information Bureau —	Rambler Automobiles 161		
Broadway Rubber Tire Co..... 198		Invader Oil Co..... 215	Reliable Dayton Motor Car Co..... 214		
Bullard, J. H., & Son..... —			Rochester Auto Co..... —		
		Jeffrey & Co., Thomas B..... —	Roever Co., Henry..... —		
Cadillac Motor Co..... —		Jones Speedometer 210	Royal Motor Car Co..... 105		
Carlough & Smith..... —			Rubay, Leon 198		
Chandler Co..... —		Kilgore Auto Air Cushion Co..... —			
Columbia Automobiles —					
Columbia Lubricants Co..... —					
Condux, E. A., & Co..... —		Lexington Hotel 211	Self Propelled Vehicles —		
Continental Cautchouc Co..... 215		Locomobile Co. of America..... —	Smith Mfg. Co., R. H..... 211		
Corbin Motor Vehicle Co..... 198		Lobee Pump and Machinery Co..... —	Snutzel Auto Supply Co..... 198		
Correspondence School of Auto Engineering		Long & Mann Co..... 213	St. Louis Motor Car Co.....4th Cover		
Crawford Inn 208		Long Island Railroad —	Splittdorf, C. F..... —		
Curtis, Harry —			Sprague Umbrella Co..... —		
		Manley, Chas. H. —	Springfield Top and Upholstering Co..... 199		
Darracq Motor Car Co..... —		Matheson, The 202	St. John Rubber Tire Co..... —		
Dayton Electrical Mfg. Co..... 199		Maxwell-Briscoe Motor Co..... —	Stearns Co., F. B..... —		
De Dietrich Import Co..... —		McGiehan Mfg. Co..... —	Swineheart Clincher Tire & Rubber Co.... —		
Derre-Clark Motor Car Co..... —		Mechanical Appliances —			
Detroit and Buffalo Steamboat Co..... —		Mendallhall's Road Maps..... 199	Thomas Motor Co., E. R..... —		
Diamond Rubber Co..... —		Mercedes Import Co..... —	Three Men in a Motor Car..... —		
Diezemann Shock Absorber..... 214		Meyrowitz, E. B..... —	Times Square Auto. Co..... —		
Dietz Co., R. E.....3d Cover		Michelin Products Selling Co..... —	Traction Tread Tires..... —		
Dixon Crucible Co..... 197		Miller, Chas E..... —			
Duryea Power Co..... —		Motocar Co., The..... 215	United States Jack Co..... 197		
		Motor Directories Co..... 215			
Eldredge Elec. Mfg. Co..... 197		Motor Vehicle Directory 210	Vacuum Oil Co..... 206		
Electric Vehicle Co..... —		Motor World, The 215			
Elmore Mfg. Co..... —		Mutty Co., L. J..... —			
Enterprise Tire & Repair Co..... 197					
		Napier Motor Co. of America..... —	Warner Instrument Co.....2d cover		
Fickling & Co..... —		Nathan Novelty Mfg. Co..... —	W. E. B. Sparkplug..... 199		
Firestone Tire & Rubber Co..... —		New Jersey Central..... —	White Sewing Machine Co..... —		
Flak Rubber Co..... —		New York Spring & Wire Co..... —	Willis Co., E. J..... —		
Ford Motor Company..... —		Niagara Motor Boat Co..... —	Woods Motor Vehicle Co..... —		
Frayer-Miller —		Northern Mfg. Co..... —			
Funke & Co..... —			Young, O. W..... 197		

An American Car in Germany

AT THE KAISER'S ARMY MANOEUVERS IT OUTCLASSED ALL THE FOREIGN MAKES.

Lieutenant Walter F. Simon, of the Kaiser's Sixth Hussars, who returned from Germany recently, relates some interesting information regarding his American-made car and some of the things it did while there. Lieutenant Simon is president of the Frontier Iron Works, of Buffalo, N. Y., and is in America on a continued leave of absence, i. e., he must return to Germany three years in every five to perform official duties in the Emperor's manoeuvres.

When the lieutenant re-visited his native country the last time he took his Thomas car with him, partly with the intention of making an extended tour and partly for practical use in the military doings. Of late years it has been customary to use motor cars in the annual manoeuvres. A body of auto owners is made up and known as the Imperial Voluntary Automobile Squad. During the two weeks of evolutions these persons loan the services of their cars to the government. However, this is the first and only time that an American motor car has been used in official capacity.

Lieutenant Simon was appointed on the staff of General Von Woyrsch and placed in command of all the cars used. There were forty of them, including German, French and Italian makes, and the fact that the American car was built well for roads in the United States, led to considerable discussion on the part of some of the foreign motorists, who doubted its ability to get over the German ground. They required to be shown—and were shown. The "Flyer" proved that it could do all that the European cars could, and in addition to this, demonstrated that it was able to outpoint them in nearly every respect.

Here is the lieutenant's own story of the way his Buffalo product trimmed the other fellows over there:

"I had two distinct advantages over the German, French and Italian cars," he says, "advantages which prove the contention of the American maker. The first was that my car developed its full horse-power, while the European machines, whose horse-power was rated as high as mine, did not come within a considerable amount of showing as much. Another advantage was that my car had from four to five inches more road clearance than the other cars, a fact which frequently caused them to become stalled, while my car went sailing over obstructions and through places where the others could not follow.

"For instance, when we received orders to deliver at some distant point, it was the custom to ignore the roads, except where they provided the shortest cut to the place of destination. We would go through ditches, across fields and woods,

and over obstacles that ordinary tourists, no matter in what part of the country they might be, would think it suicidal to attempt to pass. My car nearly always started in the lead and from then on it would be a race to see which would be the first at the finish. They would always attempt to follow where we led, but it did them no good. In point of speed alone, there was only one car which seemed able to give me a good race and that was one of German make, whose horse-power was

cars stuck somewhere in the fields, waiting for assistance to help them out.

"A custom which they have in Germany is that when a macadam road is repaired the workmen place piles of stone at intervals along its course in order to force people to travel in a see-saw fashion from one side of the road to the other. This was in order to force them to travel on all parts of the road instead of merely beating down a path in the centre. With the cars of European make this plan suc-



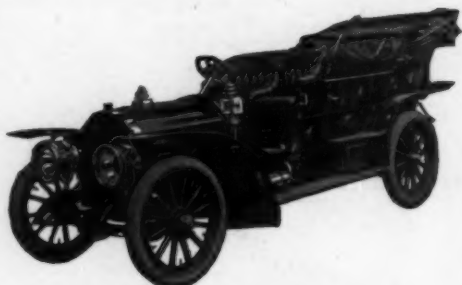
A QUIET NOOK IN THE CANADIAN WOODS.

rated at twenty more than mine, and which had been especially prepared for the manoeuvres. We would often come to fields which were soft, and there was where my power came in to the best advantage. We could plow through the ground and across places where even if the road clearance had not been to my advantage, my power would have done the work where others would not. It was no uncommon thing to see three or four

ceeds very well, and for touring I would have been the first to have acceded to the intentions of the road repairers, but during the manoeuvres we were working under actual war conditions and could not stop for anything.

"Owing to the clearance of my car from the road I was able to avoid striking these stones most of the time, although occasionally we would run across a pile a little higher than the others and the

Matheson



Licensed under Selden Patent.

Critical judges agree that the 1907 Matheson is equal to any car built in the World.

The Matheson is not "thrown together." It is conscientiously and accurately built of the best materials procurable. ..

A CAR OF ABSOLUTE PERFECTION IN EVERY MECHANICAL DETAIL.

RUNABOUTS, TOURING CARS, LIMOUSINES and LANDAULETS

The
**Matheson Company
of New York,**

1619-21-23 Broadway. Tel. 4876 Col.

REPRESENTED IN

Chicago, Ill.—The Matheson Co. of N. Y. Western Branch, 1321 Michigan Ave.
Philadelphia, Pa.—Titman, Leeds & Co., Broad and Cherry Sts.
Boston, Mass.—The Matheson Co. of Boston, 92 Mass. Ave.
St. Louis, Mo.—The Southside Auto Co., 2339 So. Grand Ave.
Richmond, Va.—Motor Transfer Co.
San Francisco, Cal.—The Matheson Co. of California, cor. Golden Gate and Van Ness Aves.
Rochester, N. Y.—Rochester Automobile Co., 150-170 South Ave.
Albany, N. Y.—Albany Garage Co., 28-30 Howard St.
Binghamton, N. Y.—H. D. Clinton Auto Co.
Calgary, Alberta, Canada.—A. S. Urquhart.
Watertown, N. Y.—Watertown Auto & Supply Co.
Cleveland, Ohio—Central Auto & Supply Co.
Newark, N. J.—Matheson Co. of N. J., J. B. Ryall, 9 Clinton St.
Jersey City, N. J.—Hudson County Auto Co.
Long Branch, N. J.—Long Branch Auto Co.
Baltimore, Md.—The Matheson Co. of Maryland (R. E. Wood Lumber Co.).

PITTSFIELD SPARK COIL CO.

MANUFACTURERS OF



**Coils
Timing
Devices
Switches**

**Jewell Mica
Plugs
Terminals
Etc.**



Our Coil is the most rapid, economical in battery consumption, most durable and reliable made in the world. Used exclusively by several of the largest and best automobile manufacturers in the country.

The Franklin Car, which recently won the Economy Test, was equipped with our entire Ignition Outfit—Coils, Timing Devices, Switches and Plugs

All we ask is an unprejudiced test to prove to you that our goods are what we claim

Automobile owners who have ignition troubles would do well to test this Coil

Write for prices and description of our 1907 Ignition Products

Pittsfield Spark Coil Co.
PITTSFIELD, MASS.

axle would come up against it, with the result that the stones would fly in all directions. With the foreign-made cars, however, this was impossible, since it would have been a continual succession of bumps for them, and sooner or later their axles would have been in two pieces.

"General Von Woysch owes part of his victory in the maneuvers to the E. R. Thomas Motor Company. One day he learned of a movement ten miles away, which, unless his division commander was warned, would result in the technically wiping out of a considerable portion of his forces. One move on his part in preparation saved the day. He immediately issued orders and I started out with the Thomas and a dispatch to the division commander. There were only comparatively few minutes in which to anticipate the move aimed against him, and I started down the road, went over a ditch, over fields, along more roads and fields, taking no care of bumps or anything that came in the way, and landed the dispatch in the hands of the division commander in time for him to forestall the move that had been aimed against him. For our part in this we received the warm thanks of the general.

"It is needless to say that after the things we went through during the two weeks of the maneuvers, German officers and automobile owners were anxious to have a look at this car. Everywhere I was asked to give permission to have the car looked over, and this I always granted. I believe the experience and the feats my automobile performed in Germany has tended to greatly heighten the respect in which American manufacturers are held."

Steel for Automobiles

There are now seven different kinds of steel used by automobile constructors. They are the outgrowth of the extremely high strain put on the material and the necessity of lightness of construction. Every precaution that the newest development in metallurgy have placed at the disposal of manufacturers has been utilized. Nickel steels are the most popular, and although of variable kinds some have the quality of enduring great friction and little shock. There are also steel with low nickel and medium carbon for shafts, axles and bearing cups, and steel with high nickel and low carbon for valves, owing to the low expansion of this grade under changes of temperature. There is also silicon steel with varying proportions of silicon and carbon, for springs and pinions, and chromium-nickel steels, low in nickel and chromium, for parts requiring hard metal with high resistance to shock, and the newer kinds of steels of unknown

compositions with which different makers are constantly experimenting.

The Village Rubbersmith

Under a spreading blacksmith sign,
The village blacksmith sat;
He heard the chuf-chuf-chuf and said,
"Where is my business at?
The road is full of horseless things,
And bikes and such as that."

The smith was deeply in the dumps;
Ah! that was plain to see.
His wink-eye winked a knowing wink
Up at the chestnut tree;
And then he said, "These horseless things
Have put a horse on me."

And through his crisp and curly hair
His sinewy hand he ran.



ON THE WAY TO GRANT'S TOMB.

Says he, "I'll get some different tools,
As well as any man.
I'll mend a punctured rubber tire—
I'll charge whate'er I can."

Week in, week out, from morn till night
His bellows blows no fires,
Instead it feeds a rubber tube,
That blows up rubber tires.
He has a tank of gasoline,
Cement and pipes and wires.

And children coming home from school
Rubber in the open door,
They rubber at the rubber tube
A rubbering 'round the floor;
They rubber at the rubbersmith,
Who rubbers tires that tore.

He can't go, Sunday, to the church,
For that's his busy day;
Some city chauffeur's in the lurch,
And here is work—and pay.
The chauffeur buys some gasoline
And chuf-chufs on his way.

But never mind, his daughter's there,
Up in the choir stand;
And as she holds the hymnbook high,
Shows diamonds on each hand.
For daughter's buying jewelry
And Dad is buying land.

Repairing and pumping and mending,
Onward through life he goes,
Each morning sees some tire break,
Each evening sees it close.
Something mended, somebody done,
Puts money in his clothes.

Thanks, thanks to thee, my worthy friend
On the lesson I'll meditate.
All must at time get different tools,
This world will never wait;
If we would live the strenuous life,
We must keep up to date.

J. N. H.

Curious Ideas About Speed

We have seen the statement made repeatedly that an automobile runs faster at night than in the daytime. Why should it? The difference is in the imagination of the driver who makes such a discovery. We know that young, timid locomotive engineers often share such views about the speed of their engines.

Many years ago a discussion arose in New York concerning the speed of machinery at night, some persons claiming that electric machinery ran faster during the hours of darkness than when the light of day was shining upon it. The matter became so serious that the editor of a scientific paper purchased a speed indicator and made a series of elaborate tests. It is needless to say that

he found there was no difference in the velocity of the wheels due to light or darkness.

Mrs. Frances Hodgson Burnett, the celebrated novelist, is an enthusiastic automobilist, and she spends much of her leisure out of doors, speeding over the country in a powerful car. She divides her time between the United States and England. Her English home is in Kent, the hop country of England. She lives in a beautiful house on the river Medway, near where Charles Dickens had his home. Mrs. Burnett, who was originally from Manchester, England, flashed into popularity in her twenty-eighth year, through her first sustained novel "That Lass o' Lowrie's." She has produced a great many interesting books since that time, but none of them, not even "Little Lord Fauntleroy," took the popular taste by storm as did "That Lass o' Lowrie's."

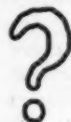


Will You Take A Motor Ride With Me?

A Prize of
\$50

FOR THE BEST
ANSWER TO
THIS QUESTION

WHAT IS THE
BEST MOTOR
FOR A TRIP
LIKE THIS



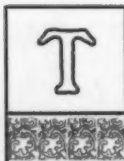
THE publishers of AUTOMOBILE MAGAZINE offer the following prizes for the best answers to the above question.

The competition is opened freely to all who may desire to compete without charge or consideration of any kind, and that prospective contestants need not be subscribers to the publication in order to be entitled to compete for the prizes offered.

First Prize \$50.00
Second " 25.00
Ten next prizes of \$1.00 each

Everyone is invited to enter this contest. Simply write a letter naming the car you would select and stating why it is best. Letters must not contain more than 500 words. Contest will close August 15, 1907, and prizes will be awarded in the month following. Address,

Contest Editor,
Automobile Magazine,
136 Liberty St., New York City



HIS is a genuine invitation. It is actually extended to every person in the United States who may read these lines.

During the next two years I expect to take a series of motor tours which will eventually cover every section of the United States. The trips will be partly for pleasure but mostly for business. I have organized the National Association of Magazine Agents, the members of which are found in nearly every section of our country. So the chief object of my trip will be to call upon these widely scattered members and thus strengthen our association by some personal work.

I am going to earn the car in which I will take the tours by obtaining five thousand new subscribers to the "Automobile Magazine." Of course I expect that my fellow members of the association will help considerably, but I also invite everyone who reads this to join me in the enterprise. The publishers of the magazine have made their offer to me most liberal, so that I can offer everyone who gets even a few subscriptions for me a very liberal rate of commission. In addition to the commission

I WILL GIVE A CASH PRIZE TO EVERYONE WHO OBTAINS TEN SUBSCRIPTIONS.

There isn't one person who reads this who could not obtain at least ten subscriptions EASILY. The "Automobile Magazine" is the only really popular magazine of motoring at a popular price. There are other good magazines on motoring, but they are either too technical to be popular or else too high priced. Nowadays the interest in motoring is by no means confined to the owners of automobiles. In every community there are hundreds who will be glad to find a magazine which tells all about motor cars and motoring in plain, interesting, but non-technical language.

Of course I shall be glad to hear from everyone who is at all interested in my plan. Anyone who can spare a little time to look up the motor enthusiasts of his neighborhood can make a neat sum in commissions and prizes. I will furnish everything needed to conduct the work. Simply write me—a postal will do—and I will send you some sample copies, order blanks, etc.

When I take my trips I shall so arrange my itinerary that I may make a call upon everyone who aids me in this subscription campaign. So that is why I ask you to take a motor ride with me. Will you? If so, write to-day.

HERBERT HUNGERFORD,
828 Tribune Building, New York City.

Mr. Morley's Views on the High Powered Runabout

Since the high powered touring runabout has leaped into popular favor and men can leave their offices in the afternoon and easily go to their country homes many miles beyond the city's din before dinner, the question of speed upon the highways demands better legislation. The present measures for controlling the automobile upon the highways are not efficient.

W. G. Morley, secretary of the Aerocar Company, who is now building one of these speedy machines, believes that the trouble could be remedied.

"I believe that we could well pattern after the law which is in force in Jamaica," he says. "It is simply this: 'No person shall drive a motor car on a public highway recklessly or negligently, or at a speed or in a manner which endangers the public.'"

"The wisdom of such a provision, as opposed to one which sets a maximum speed limit for different parts of the highway is upheld by reports that have been collected. It has been shown that in almost every accident the automobile was not exceeding the speed limit. Most of the accidents have occurred at intersecting streets, at sharp turns or where the traffic was too heavy to justify the speed at which the cars were being driven. The Jamaican law, which is similar to those in force in many European countries, puts the responsibility for caution on the driver. It leaves to judicial interpretation what, under each set of circumstances, constitutes reckless or dangerous driving. Such a law would simplify the direction of violations, substituting a broad consideration of the conditions for an accurate determination of speed, a matter requiring the expert use of a stop-watch and always open to dispute.

"I am of the opinion that such a simplification of the automobile laws would make for better restraint of the selfish driver and the greater safety of both automobilists themselves and the public at large. The roadways are for the public use, and when there can possibly be no danger of life and limb or the rights of others, I can see no reason why a motorist should not speed up his car to his heart's desire without violating the law. Again, those energetic officers in the country districts who have made rules and regulations of their own, then hide out of sight to capture a violator and force him to part with his 'filthy lucre' would be put out of business and have to go to work. The motorist would feel that the entire responsibility would be his and the speed for every hundred feet of ground would have to be determined by him. The penalty for those who do drive recklessly should be severe and worthy of remembrance."

Use for the Camera

It is said that one of the recent plans adopted on some of the railways in England is the application of photography to the examination of bridges or tunnels which are thought to be giving way. It is the photographer, and not the engineer who makes this kind of inspection, and it has occasionally been found that what might escape the eye of the engineer is not overlooked by the eye of the camera, and another advantage of the photographic method is that there is a graphic record of how things were at the time the photograph was taken.

Cui Bono?

An industrious watchmaker, in Toronto, Canada, has recently constructed a steam engine smaller than a common



house fly. It weighs 4 grains, and it would require 120 such engines to weigh one ounce. The speed is said to approach six thousand revolutions per minute. The sound emitted while running resembles that made by a mosquito about to alight on a victim. The bore of the cylinder is 3-1000 of an inch; the stroke is 1-32 of an inch. The working parts are of steel. The engine bed and stand are of gold. There are seventeen pieces in the engine, and in running before the Canadian Institute compressed air was used. No motion is visible to the naked eye, but the calculations of speed made by Prof. C. A. Chant of Toronto University shows that the engine is the fastest of its size on earth. It always seems to us that there is an enormous amount of energy wasted in work like this.

The Hon. C. S. Rolls, of Manchester, England, who was elaborately wined, dined and petted by the automobilists of this country, has returned home carrying a decidedly jaundiced view of things American. The Hon. C. S. Rolls is the designer of an excellent car and is himself a skilful automobile driver, but he holds his nose so prominently in the air when mixing with plebeians that

he sees nothing good outside of England. The Hon. C. S. Rolls speaks disparagingly of American automobiles, of American roads and of everything on this side of the water that he considered worthy of speaking about. The Hon. C. S. Rolls came to the United States looking for capitalists who might be persuaded to engage in the manufacture of the Rolls car. The failure of our people to embrace the Rolls car may have irritated the spleen of the hon. automobilist.

"From the Intake" is the title of a neat little booklet that is being circulated by the Aerocar Company of Detroit. On the cover is a design showing an intake pipe from the big model F touring car. It is disconnected from the motor and the contents of the book are supposed to be coming from the intake.

Many of the people who take an interest in racing believe that the weight of 1,000 kilogrammes or 2,205 pounds, which was established by French racers for such events as the Gordon Bennett cup and used for the Vanderbilt cup, is too light for the high-powered racers now being built. Almost every car had to be trimmed to the utmost permissible in order to pass for the Vanderbilt race and some had a hard time of it. It is probable the American Automobile Association would readily agree to an increase of the weight limit if the foreign clubs were willing, but concerted action is essential. This is a matter that may be taken up at the international conference of clubs soon to be held at Paris.

Los Angeles, Cal., is a delightful town noted for the enterprise of its people. The leading citizens of that place have displayed an act of self-denial that is without precedent. Pressure had been put upon them to promote an enterprise that has generally been noted for money making and we learn that the merchants and financiers of Los Angeles have decided that it would be "undesirable and inexpedient" to promote the project of a Los Angeles World Fair for 1915. They are of the opinion that the reaction from it would more than offset the benefits.

John Lurie, the proprietor of the Auto Supply Company, No. 1733 to 1737 Broadway, announces a new importation of motor toggery for women. The new goods include the latest Paris and London styles in coats, dusters, turbans, caps, veils, gauntlets and goggles. All the models were picked out by expert women buyers. Those who purchase these goods may rest assured that they are getting the most up-to-date European designs.

We Will Save You Money

IF YOU USE OUR
MILWAUKEE RADIATOR COMPOUND
OR OUR
MILWAUKEE COMBINATION
ANTI-FREEZING COMPOUND

because the lime and impurities of your cooling water in Radiators and Water-Jackets settle and form a scale on the metal. One-eighth of an inch scale around your water-jacket increases your lubricating oil bills 30 per cent., besides it cuts down the life of your Motor on account of improper cooling.

If you add our MILWAUKEE RADIATOR COMPOUND to your cooling water, your water-jackets and radiators will always be free from scale, therefore guarantee a proper cooling, save your money on lubricating oil bills and lengthen the life of your cylinders.

OUR MILWAUKEE COMBINATION ANTI-FREEZING COMPOUND does the same thing as our RADIATOR COMPOUND and is superior to any ANTI-FREEZING COMPOUND on the market to-day. Water containing this compound in proper quantities, and according to our directions, will not freeze at a temperature as low as 30 degrees below zero, and it does not injure the metal.

Prices are as follows:

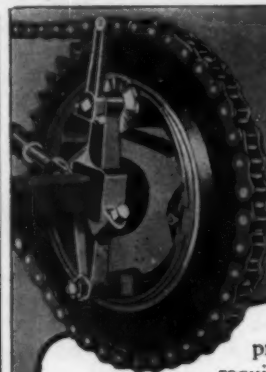
MILWAUKEE RADIATOR COMPOUND, Per Gallon Can.	\$1.00
MILWAUKEE COMBINATION ANTI-FREEZING COM- POUND Per Gallon Can.	1.25

A liberal discount will be allowed on cases containing one dozen gallon cans or more and also on bulk orders. These preparations are cheaper than anything on the market to-day, and as to quality they cannot be beaten.

BADGER MFG. AND SUPPLY CO.

Dept. "B"

MILWAUKEE, WIS.



AN OIL FOR EVERY PART

Mobiloil is especially prepared to meet the particular requirements of every make of automobile. It comes in various grades—a special grade for every make of engine.

VACUUM MOBIL OIL

is the only perfect automobile lubricant. Sold everywhere in barrels and cans of varying capacities.

Send for Mobiloil booklet which lists every make of automobile and tells what grade of Mobiloil to use for each. It's free to you. Mobiloil is manufactured by

VACUUM OIL CO.,
Rochester, N. Y.



The Automobile Magazine

The most instructive and entertaining periodical of its kind published

AND KRAUZ'S COMPLETE AUTOMOBILE RECORD

A popular and handsome volume designed to furnish the autoist with a complete record of expenditures and other information that will interest every motorist. The book is album shape, 144 pages, bound in cloth, attractive cover design in colors, absolutely given free to every Subscriber for one year to the

AUTOMOBILE MAGAZINE

SPECIAL OFFERS TO OUR SUBSCRIBERS:

One year Automobile Magazine and

Krauz's Complete Automobile Record, in cloth	\$1.00
Krauz's Complete Automobile Record, bound in red morocco	\$1.50
Krauz's A B C of Motoring, bound in cloth	\$1.50
Krauz's A B C of Motoring, bound in red morocco	\$2.00

Address **AUTOMOBILE MAGAZINE**

-- 136 Liberty St., New York

Are Hard Times Coming?

Panics concerning the value of bonded securities, stocks and other representatives of property are particularly depressing to the automobile business. The luxury of purchasing automobiles is one of the expenditures to be curtailed when money is scarce and many business men are uncertain how financial obligations are to be met.

We do not think the present slump in the prices of leading stocks will result in a general business depression, but there is no saying when such movement may stop them once they get started. Some of the worst periods of depression of business that the United States has endured began with much less momentum than the credit of the commercial world has gone through in the last ten days. If we have entered upon one of the periodical seasons of depression known as hard times, it is going to be peculiarly disastrous to automobile interests. There are many new concerns working with good prospects into the business of automobiling manufacturing, and not a few of these are likely to fail when credit is not to be obtained. We trust, however, that the good times we have enjoyed for the last seven years will remain with us a few years longer.

Sowing the Wind

By many people in this self-made United States the man who saves money is regarded as a self-denying fool, and the man who acquires riches is considered a criminal who deserves to be robbed. These sentiments are not confined to the lawless classes who bear antipathy to wealth and industry; they are shared by many people who ought to form barriers against the robbers who are always trying to possess themselves of property belonging to others.

Want of respect for the rights of capital is more prevalent in the United States than it is in any other country, and it is bound to bring disaster to the nation if persisted in much longer. In the numerous disputes between capital and labor there is a growing tendency among workmen to denounce capital and claim that it rightly belongs to labor, since labor created it. Part of the press has been busy propagating this dangerous doctrine. The people have been taught that capital is robbing them. Prejudice has been fed and hysteria stimulated which has led legislators to legislate in a manner calculated to confiscate property. That is sowing the wind of disaster, and the whirlwind will soon be reaped, unless sounded sentiment prevails in the near future.

One Thousand Dollars Each

Not long ago Mark Twain made a speech at a dinner of the New York Press Club. He said he had been a simple speller all his life. When a publisher offered him five cents a word for an article, do you think he would write the word policeman where "cop" would do? By no means; and again, he said, he could not be induced to use the word valedictudinarian for five cents. He wanted fifteen cents before he would let that word get into his articles.

Not long ago, at a meeting of a literary club in the Quaker City called the Franklin Inn, says the *Philadelphia Bulletin*, a young poet, licking his lips, said that Conan Doyle was paid \$1 a word.

"That is nothing," said a railway advertising man. "I know of a case where a man was paid \$1,000 a word. Our line used to have at its grade crossings a very long and complicated sign that began: 'Beware of the engines and cars,' and then this sign went on with a lot of injunctions and warnings that would have taken five minutes to read. In a number of accident cases the complainants for damages declared that our long signs were not clear warnings. Therefore the line decided at last to get a new grade crossing sign, and Judge Paxon was engaged to write one. The sign that Judge Paxon wrote cost \$1,000 a word, but it was a classic. It remains a classic. It is as well known among us as 'Father, I cannot tell a lie,' or 'England expects every man to do his duty.' The sign that cost \$1,000 a word, or \$6,000 in all, was the famous 'Railroad Crossing—Stop, Look and Listen.'"

The work on the Panama Canal has progressed very rapidly under the able management of Chief Engineer Stevens, but now he has resigned, and his withdrawal from the great work is a misfortune to the country. No specific reason has been made public for Mr. Stevens' decision to resign, but we judge there have been too many amateurs in politicians' robes interfering with his work. Now, a batch of politicians, headed by that arch-meddler, Speaker Cannon, have gone to inspect the work, and we expect the result will be confusion worse confounded.

Gasolene Locomotive

A narrow gauge gasolene locomotive is performing good work on an industrial railway in the North of England. The motor is horizontal and is capable of developing 20 brake horse power at 600 revolutions. It has the general appearance of a locomotive, but the casing of the whole resembles the outside of a Belpaire fire-box.

The driving wheels are four in number and are 18 inches diameter and

driven from the motor by chain gear. The engine is fitted with a heavy fly wheel which is required for the heavy pulls of rail traction. Two speeds forward and two speeds reverse are provided. The speeds are intended for three and eight miles an hour, but like all motor cars their tendency is to exceed the specified speed. The novel little engine looks like a miniature steam locomotive with a radiator in front of the smoke box.

Graphite as a Lubricant

Graphite is used very extensively on railroads, especially on locomotives, and a curious thing about it is that the demand has been almost entirely created by the locomotive engineers. Many railroad companies have followed the policy of cutting down the quantity of lubricants, which is embarrassing to the men, besides being very expensive from increased friction. The enginemen nearly all carry a supply of graphite to supplement the oil supply, and they often pay for the material when it is not furnished by the company. The Dixon Crucible Company, of Jersey City, N. J., have a steady business from engineers' private orders.

The proprietor of an automobile factory who was following one of his workmen to the cemetery remarked: "Morgan always did the most valuable work of which he was capable." We consider that a good obituary notice.

The following letter has been received by the Jones Speedometer Company:

"The employees in the tool-making department of the Jones Speedometer factory at New Rochelle, New York, went out 'on strike' Thursday, March 15th. Their places were promptly filled by the Metal Trades Association, of which we are members, and practically all the tools needed for the manufacture of 1907 models have been completed.

"We desire, through you, to inform the public and the trade that there will be no curtailment, interruption, or material delay in our production, and that our customers may positively rely upon the continued prompt shipment of all orders.

"Yours truly,

"THE JONES SPEEDOMETER."

D. E. Skinner, of San Francisco, who has just returned from an extended foreign tour made in his 35-45-horsepower Renault with a party of friends, is enthusiastic over the prospects of this year's Targa Florio race to be held in Sicily next month. The interest which French, German, British and Italian manufacturers are taking in this race, he says, will undoubtedly make of it the blue ribbon event of Italian automobiling.

SOLAR LAMPS



Are Made by
EXPERT LAMP MAKERS—not ordinary mechanics or tinsmiths. We employed every expert lamp maker to be found in the west at our Kenosha factory and still could not supply the demand.

It was in order to get additional expert lamp makers that we opened our large factory in New York City. This factory extends from Thirty-Sixth street to Thirty-Seventh street and is two hundred feet deep. Though the expense of operating a factory in New York City is very great we had to open it there because lamp makers of the high quality we wished to employ would not leave New York City.

Solar Lamps and Generators are made from fewer pieces than any other make on the market. Our large twenty ton presses draw the heavy brass into the proper forms and these pieces are riveted or screwed together.

Every feature of the Solar Lamp and Generator is the very best as proven by our twelve years of doing but one thing—the manufacture of Acetylene Lamps and Generators for Bicycles, Automobiles and Motor Boats.

BADGER BRASS Mfg. Co.
KENOSHA, WIS.
 Eastern Branch 11th Ave., 36th & 37th Sts., New York City.

HAYNES

Why the Haynes is First.

The Haynes factory was the first automobile factory to be built in America (1893).

The Haynes was the first to adopt low tension make-and-break ignition (1895).

The Haynes was the first to use nickel, steel and aluminum alloy in a car.

The Haynes was the first to adopt side entrance bodies and large wheels.

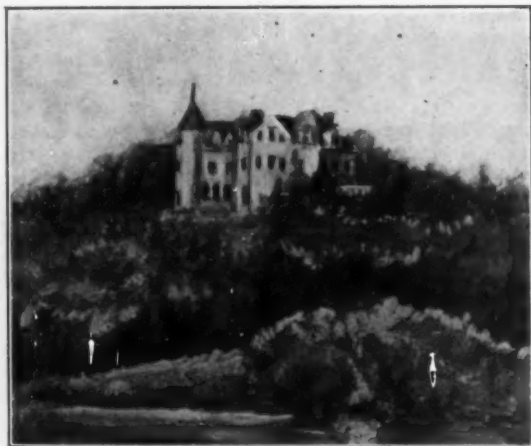
The Haynes IS first to adopt the roller pinion and bevelled sprocket direct drive, making possible the combination of shaft drive and high power.

The progressiveness of the Haynes made possible a stock car such as was seen in the Vanderbilt Cup Race. Against foreign and American cars of twice its horsepower the Haynes made a record for speed, regularity and reliability that was remarkable.

These same qualities characterize every Haynes model.

*Oldest Automobile Manufacturers in America
 Members A.L.A.M.*

HAYNES AUTOMOBILE CO., Kokomo, Ind.
 New York, 1715 Broadway Chicago, 1420 Michigan Avenue.



CRAWFORD INN.

FOR all the luxuries and accommodations of a high-class hotel, with an unexcelled cuisine and polite service, dinner at all hours of the day for Automobile Parties and Tourists, go to

CRAWFORD INN, Pompton Lakes,
 New Jersey.

*On direct route to TUXEDO, SUFFERNS and
 GREENWOOD LAKES*

"House Open All Year 'Round."

TRUFFAULT-HARTFORD SHOCK-ABSORBER



EQUIP YOUR CAR WITH
TRUFFAULT-HARTFORD
 SHOCK ABSORBER

THE PIONEER THE BEST
 FOR ECONOMY SPEED COMFORT

Ask any one who uses them.
 1907 Model Automatically Lubricated.
 Guaranteed 10,000 Miles Without Readjustment.

Hartford Suspension Company
 E. V. HARTFORD, President. 67 VESTRY ST., NEW YORK
 Applications made at our Garage, 212-214 W. 88th St.

Moslem Manners

The heathen Turk is not popularly regarded as a pattern of good manners for civilized Christians to imitate, but according to the London Lancet, a great authority on hygiene, the Moslem rules for the table are wise and wholesome.

The rules set down by old Moslem precept as to how to behave religiously and appropriately at meals are interesting, though whether they are devoutly complied with in times of festival is doubtful. Here are some examples: Wash your hands and mouth before eating. When eating never put one leg upon the other, nor put your elbows upon the table, as this hinders good digestion. Never be a slave of your repast, and never touch any meal if you are not hungry. Be ever content with what you find before you, and never give yourself great pains in preparing choice dishes. Be always, if possible, at the table in company with friends, as the Prophet never partook of his meals alone. Always begin and end your meal with thanksgiving to Allah. Always eat with your right hand, and swallow before and after food a little salt. It shows good upbringing and is pleasing to Allah ever to put into the mouth only small morsels and never to make any observations upon the defective qualities of dishes. Never cut bread with a knife, but, as the Prophet did, break it. Never choose the fruit offered, but take any *au hasard*. Never wipe your fingers with bread. Avoid blowing on a hot dish, but wait until it gets cool. Eat dates, apricots, and other similar fruit one by one, remembering in eating them thus the unity of Allah. Avoid at the table drinking much water. Your meal finished, use attentively the toothpick, gather up the crumbs and wash again your hands and mouth. Lastly, render thanks to Allah.

Leonardo De Vinci, the great Italian artist and engineer, devoted a great deal of time and energy to inventing and building flying machines. None of them was any good as a bird imitator. In this connection he invented a screw propeller which was useless for progression through air, but moved boats in water. In that medium his screw propeller was entirely practicable. What was then lacking was a steam engine to turn the propeller.

University managers ought to be leaders in promoting progress, but they generally have acted as effective retarding brakes. Leland Stanford University, Cal., people have displayed savage exclusiveness in keeping automobiles out of

the grounds, but now they have thrown down the barriers because one of the trustees has purchased a Matheson automobile. They ought to be ashamed to confess that restrictions they considered right before vanished when their own convenience called for more liberality.

We do not remember the time when there was no agitation calling for reforms in the United States Patent Office. Inventors pay the government a great deal of money to have their inventions protected by patents, and this money has become an important source of revenue; but the Patent Office is always behind with its work, and patent seekers are subject to tedious and annoying delays.



There are so many senseless laws enacted to embarrass automobilists that there is a growing tendency to defy the laws. Emerson is sound in this matter when he says: "Let a man keep the law—any law—and his way will be strewn with satisfaction."

The Leather Tire Goods Co., of Newton Upper Falls, Mass., in Space 206 A. A. at the Boston Show, exhibited their Woodworth Tread and "Kant-Skid" Tire Grip.

The common talk is to the effect that chauffeurs have no rights that ordinary people will respect, and no two people can be found who pronounce his name the same way.

My Bonnie lies under the auto,
My Bonnie lies under the car,
Please send to the garage for someone.
For it's lonesome up here where I am.
—The Index.

A Dirty House

There used to be a custom in Great Britain of making people go upon their knees to ask forgiveness when they had given offence to any individual or institution that could enforce that humiliation. One individual punished in that way turned the laugh upon the House of Commons. He went on his knees in due and ancient form and received a reprimand from the Speaker. On rising he wiped his knees and remarked, "Gentlemen, I have never been in such a dirty house before."

A city clergyman on one occasion was arguing with a successful business man on the desirability of attending church. At last he put the question squarely: "What is your personal reason for not attending?" The other smiled as he replied: "One finds so many hypocrites there." Returning the smile, the clergyman said: "Don't let that keep you away, Mr. X. There's always room for one more."

What They Took

Benedick—"Tom Jones asked Jerry Smith to 'come in and take something.'"

Biblus—"What did he take?"

Benedick—"Whisky. And then a policeman came along, and the saloon-keeper asked him to 'come in take something.'"

Biblus—"What did he take?"

Benedick—"He took Tom and Jerry."
—Catholic Abstinence.

A Lesser Evil

Messenger—Your wife has eloped with your chauffeur.

Husband—Thank fortune! Now I won't have to break it to her that the cook has left.—Harper's Weekly.

Good Times

We used to hear a great deal said about the introduction of machinery having led to overproduction, but the complaint has not been repeated much since the good times have given full work to every factory and machine shop. When the people are engaged in productive work and fairly remunerated for it, they wish to have better dwellings, better furniture, better clothing and food, as well as books, pictures, musical instruments and other things that tend to a higher degree of refinement. And, spending their money on these things, they help to keep the good times with.

The aim of a community, therefore, ought to be to procure the conditions which increase the ability of those who work to buy. So long as there is plenty of work and good wages the stimulant to good times will always be with us.

Autocar Reliability

Mechanical Efficiency
Unfailing Power
Ease of Control
Accessibility

is builded on the very groundwork of scientific motor car construction. Mechanical efficiency is secured by the use of the best materials, skilled workmanship in a modern, well-equipped factory, and a thorough system of tests which no imperfection can pass. To these are added special Autocar features, such as Autocar control and Autocar accessibility. The sum total is Reliability—a car that is reliable in every way. Write for The Autocar Book.

Limousine and Landaulet for immediate delivery, \$3,500

The Autocar Co

Member Ass'n Licensed
Automobile M'frs.

Ninth St., ARDMORE, PA.

Type XIV, 30 h. p., \$3,000

Three point unit suspension of power plant. 4 vertical cylinders. Sliding gear, roller-bearing transmission. Three speeds and reverse. Direct drive.



The Autocar

Breeziest Book Published

LETTERS OF THE MOTOR GIRL

BY ETHELLYN GARDNER

THIS book is a hummer---If you want something new in a book, here it is, served up in a pleasing manner---by the way, do you know Smith of Buffalo? He cuts quite a dash in this little book. Ask your dealer for a copy of Letters of The Motor Girl---if he hasn't got it, \$1.00 sent to the author, with your name and address, will speedily bring it to you, post-paid.

ETHELLYN GARDNER
Lock Box 1664 • BOSTON, MASS.

The DIAL
of the
"JONES"



is the Easiest to read of all Speedometers. The figures and the indicating hand are large, plain and black.

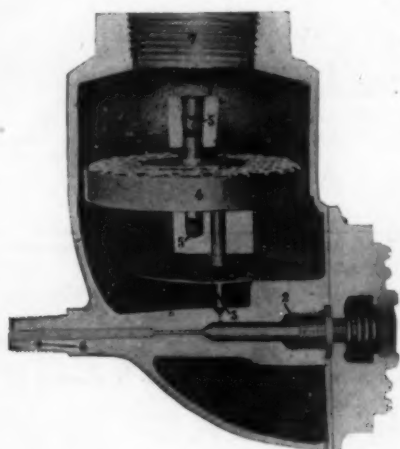
The speed may be read at a greater distance than from any other instrument—and from any angle. Meters with moving dials and complicated markings can not be read unless one is directly in front of them. The

JONES SPEEDOMETER

is OF USE TO EVERY ONE in the Motor Car—it is not designed for the exclusive benefit of the chauffeur.

JONES SPEEDOMETER COMPANY
123 West 32nd Street
New York

"The Carbureter That Carburets"



The difference between a Carbureter that CARBURETS and one that simply feeds gasoline and air FOR THE ENGINE TO CARBURET is the difference between PERFECT and IMPERFECT engine operation.

HEATH DRY-GAS CO., 1937 Broadway, New York

The Springfield Motometer IS THE EASIEST



of all instruments to Read from the Seat because the Pointer takes its place on the dial and remains perfectly steady.

It instantly shows the slightest increase or decrease of speed, but neither swings nor dances around the point it is indicating, for the reason that it is directly connected to A GOVERNOR THAT GOVERNS

It must move exactly as the governor moves.

It is accurate and reliable because correctly constructed. Every motion is balanced.

All working parts are of steel with hardened self-lubricating bearings. A fine piece of mechanism which meets the approval of the mechanical experts.

It is covered by a business-like guarantee. The Price is Right—Fair To Us, Fair To You

You can put in more money, but you can't buy better service.

For any sized wheel and fittings for any car. 50 Mile Instrument, combining Trip and Season Odometer, \$45.00.

60 Mile Instrument, combining Trip and Season Odometer, \$50.00.

Either size, without Odometer \$10.00 less.

WE CAN NOW MAKE IMMEDIATE DELIVERIES

The R. H. Smith Manufacturing Company
Patent and Manufacturer
SPRINGFIELD, MASS.
Est. 1865. Inc. 1883

Lexington Hotel

JUST OFF BROADWAY ON
47th STREET, WEST, AND LONGACRE SQUARE

NEW YORK

OPENED JAN. 1906

**Absolutely
Fireproof**

**Unsurpassed
Apartments**

**324 Rooms with
Private Baths**



HIGH CLASS, UP-TO-DATE HOTEL

\$1.50 PER DAY AND UP

European Plan

Within Five Minutes Walk of Eight Theatres

SEND FOR SOUVENIR POSTAL CARDS

GEO. R. JONES & SONS

Book Department

Cash must accompany order. No books sent C. O. D. Give name of book and author, and we can furnish any book published. All books sent by mail free for price named. If not satisfactory return and we will refund the money.

AUTOMOBILE MAGAZINE

136 Liberty Street, New York

A B C of ELECTRICITY. Wm. H. Meadowcroft. The best known elementary treatise on this interesting subject. Written in language that is easily understood. Fully illustrated.....50c.

AUTOMOBILE POCKETBOOK. E. W. Roberts. There are many books that give information and instruction concerning automobiles, but the pocketbook prepared by Mr. Roberts is the gem of purest ray serene. It ought to be the bosom friend of every automobilist. It not only describes in clear language the construction of automobiles and their accessories, but tells how many difficulties to be met with in operating can be overcome.....\$1.50

CATECHISM OF ELECTRICITY. N. Hawkins. This contains enough questions and answers to give any mechanic a pretty general knowledge of electricity as applied to modern uses. Its 550 pages and 300 illustrations are full of information for the mechanic.....\$2.00

ELECTRICITY SIMPLIFIED. T. O'Conner Sloane. This makes plain many of the perplexing problems of electricity by simplifying them and clearing away some of the fog which some like to throw around a new subject. By clearing this away the problems become easy of solution.....\$1.00

ELECTRICIAN'S HANDY BOOK. T. O'Conner Sloane. A comprehensive work on practical electric engineering that can be readily understood by the non-technical man and at the same time the educated engineer will receive great benefit from it. Pocketbook style. Leather bound.....\$3.50

ELECTRIC WIRING. By Cecil P. Poole. Containing numerous elementary tables and formula. Illustrated with diagrams. Leather.....\$1.00

GAS ENGINE CONSTRUCTION. Henry V. A. Parsell and Arthur J. Weed. Clearly and simply describes the principles of operation of gas engines. Illustrated.....\$2.50

GAS ENGINE TROUBLES AND REMEDIES. By Albert Stritmatter. Deals with gasoline feed supply. Starting fuel consumption, ignition timing. Illustrates troubles, lubrication, and explains the condition of the engine as indicated by its noises. It is not a guide in engine designs; it enables the gas engine operator to help himself and to learn the "why" of things.....\$1.00

GAS ENGINES AND PRODUCER-GAS PLANTS. R. E. Mathot. A guide for the gas engine designer, user and engineer in the construction, selection, purchase and operating of gas engines. Illustrated.....\$2.50

GAS, GASOLINE AND OIL VAPOR ENGINES. Gardner D. Hiscox. The latest book on this interesting and important subject. Has chapters on the horseless carriage as well as on the leading makes of engines.....\$2.50

HORSELESS VEHICLES, AUTOMOBILES AND MOTOR CYCLES. Gardner D. Hiscox. Treats on the construction and management of all kinds of automobiles. Illustrated.....\$3.00

HOW TO BECOME A SUCCESSFUL ELECTRICIAN. T. O'Conner Sloane. A plainly written book for those who aspire to the electrical field. The author is a practical man and gives much good advice.....\$1.00

SELF-PROPELLED VEHICLES. H. Mans. A most comprehensive book on the theory, construction, operation, care and management of all forms of motor cars. Has upwards of 600 pages 6 1/2 by

8 1/2 inches, most profusely illustrated by first-class engravings. Describes the construction and operation of cars driven by steam, gasoline or electricity. Best book of its kind in print.....\$2.00

SPANGENBERG'S STEAM AND ELECTRICAL ENGINEERING. By Messrs. E. Spangenberg, A. Uhl and E. W. Pratt, 1904. A reference work for engineers, electricians, firemen, linemen, wiremen, steamfitters. Treats of stationary and locomotive engineering, electricity, compressed air, mechanical refrigeration, gas and gasoline engines, hydraulic elevators, repair work, etc. 672 pages, partly in question and answer form.....\$3.50

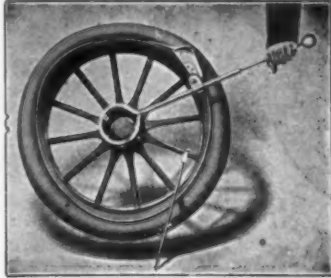
THE GAS AND OIL ENGINE. Dougald Clark. Treats of thermodynamics, combustion and explosion, different types of engines in practice, mechanical details and production of gas. Scientific but not mathematical, except in the chapters on thermodynamics. 558 5/4 x 8-inch pages; 228 illustrations...\$4.00

THE GAS ENGINE HANDBOOK. By E. W. Roberts. A small pocketbook of 220 pages giving just the information about theory, running and design that a practical man wants. Gives details of gas engines' troubles, their cause and cure. Illustrated. Flexible leather...\$1.50

THE PRACTICAL GAS ENGINEER. By E. W. Loganecker. A manual of practical gas and engine knowledge. Covers errors to be avoided in construction. Tells how to erect, operate and care for gas and gasoline engines. Intended for the gas and gasoline engine owner, engineer or person wanting practical information on this style of motor. Good index to find subjects. Third edition 1903.....\$1.00

OUR TIRE ADJUSTERS WILL PUT ON OR TAKE OFF ANY TIRE

The "MINUTE" ADJUSTER



For CLINCHER TIRES

In from One to Five Minutes WITHOUT EXERTION

The "Minute" clincher tire adjuster is true to its name. It will actually take off or put on the *heaviest clincher tire in one minute* without injury to the shoe or inner tube and may be easily operated by a woman or child.

The "L. & M." Ring tire adjuster is the only ring tire adjuster on the market.

It consists of six tools which are slipped over the tire at intervals, and by turning crank, the tire is forced back from the ring all the way around, thus enabling you to put on or take off the ring with ease.

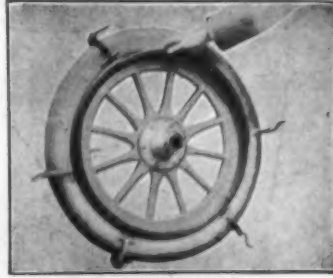
Both adjusters are absolutely guaranteed.

Write to-day stating kind of tire you use, and we will send you illustrated booklet and price list. Patents applied for.

LONG & MANN COMPANY

520 Central Building, Rochester, N. Y.

The "L. & M." ADJUSTER



For RING TIRES

GARAGE AND REPAIR STATIONS

ALABAMA.

Birmingham, White-Blakeslee Mfg. Co.
Mobile, Mobile Motor Car Co.

ARIZONA.

Phoenix, Southwestern Automobile Company.

CALIFORNIA.

Long Beach, C. E. Walters, 323 E. 4th St.
Los Angeles Auto Machine & Garage Co., 631 San Pedro St.
Los Angeles, Burke Bros., 485 S. Spring St.
Moore, Geo. P. Co., Inc.
Oakland, Bennet's Auto Garage.
Riverside, Alex. Nelson, Eighth St.
Sacramento, Jos. J. Schneer, 1009 No. J St.
San Francisco, Boesch Lamp Co., 1509 Grove St.
San Pedro, Marine Supply Co.
Upland, Euclid Garage.

COLORADO.

Colorado Springs, Colorado Springs Garage Co.
Denver, Automobile & Repair Co., 1640 B'way.
Denver, O. Burke, 918 Larimer St.
Pueblo, Pueblo Automobile Co.

CONNECTICUT.

Bantam, Bantam Anti-Friction Co. (First-Class Repair Station.)
Bridgeport, Bridgeport Automobile Co.
Greenwich, Allen Asten & Co.
Hartford, Brown, Thompson & Co., Main St.
Hartford, The Miner Garage Co., Cor. High and Allyn Streets.
Jewett City, Jewett City Auto Sta.
Meriden, Meriden Automobile Station. Selling, Storing and Sundries, Automobile Repairing, 41 West Main Street. Telephone, 359.
New Britain, Corbin Motor Vehicle Co., Myrtle Ave. and High St.
New Haven, D. H. Buell & Co., 316 State St.
New London, W. H. Starr, 88 Greene St.
Norwich, Smith & Swan, 276 Main St.
Waterbury, H. M. Tyrrell, Jefferson St.

DELAWARE.

Wilmington, T. C. Bradford, 311 Market St.
Wilmington, Delaware Auto. Storage and Repair Co.

DISTRICT OF COLUMBIA.

Washington National Capitol Auto Co., 1120 18th St., N. W.
Washington, J. B. Maxwell, 829 14th St., N. W.

FLORIDA.

Jacksonville, Clarke Automobile and Launch Co., 18 Ocean St.
Miami, Mr. Einig.

GEORGIA.

Atlanta, Capitol City Automobile Company.
Atlanta, Augusta Garage Co., 51 Broad St.
Bainbridge, Charles A. Caldwell.
Macon, Automobile & Machinery Co.
Savannah, G. W. Thomas, 243 Jefferson St.

ILLINOIS.

Aurora, W. J. Reir.
Chicago, The American Locomotive Co., 1532 Michigan Ave.
Chicago, The Automobile Parts & Equipment Co., Michigan Ave. and 13th St.
Chicago, The Franco-American Auto & Supply Co., 1404 Michigan Ave., C. C. Boynton, Mgr.
Chicago, Owen H. Fay Livery Co., 243 Michigan Ave.
Chicago, White & Wildman, 1551 Michigan Ave.
Chicago, A. C. Banker Auto Co., 35th St. and Grand Blvd.
Chicago, The Haynes Automobile Co., 241 Wabash Ave.

Chicago, The Excelsior Automobile Supply Co. and Continental Caoutchouc Co., 1436 and 1438 Michigan Ave.
Chicago, Stoddard-Dayton Automobile Co., Grand Boulevard and 40th St.
Joliet, The Joliet Automobile Co.
Monmouth, Wm. Bartlett.
Elgin, Frank B. Wood, River St.

INDIANA.

Flatrock, Flatrock Automobile Co.
Indianapolis, Auto Storage & Repair Co., 23 E. Ohio St.
Indianapolis, Central Garage, 330 E. Market St.
Lafayette, The Tippecanoe Automobile Co., 928 Main St.
Muncie, Muncie Auto Garage & Repair Co., 209 E. Adams St.

IOWA.

Burlington, Ralph Rogers & Co., 316 N. Main St.
Coin, E. L. Benedict & Sons.
Cedar Rapids, Cedar Rapids Supply Co., 307 3d Ave.
Des Moines, Mason Automobile Co., E. 5th and Market Sts.
Manchester, Manchester Auto. Co.
Muscatine, Fred. Bowman.
Ottawa, J. Kerfoot.
Sioux City, The William Warnock Co.
Waterloo, Wm. Galloway.

KANSAS.

Larned, W. N. Woelk, Jr.
Topeka, Kenwood Garage, 111 E. 7th St.

KENTUCKY.

Louisville, R. L. Davis, 1003 W. Chestnut St.
Louisville, Longest Bros.

LOUISIANA.

New Orleans, Independent Auto. Co., Ltd.

MAINE.

Augusta, Fifield Brothers.
Lewiston, H. J. Willard Co., 48 Ash St.
Portland, Dowling's Garage, 22 Forest Ave.
Telephones N. E. 1630, Auto. 1656.
Portland, Maine Motor Carriage Co., Free & South Sts. Telephones N. E. 290, Auto. 2861.
Rockland, The Rockland Garage and Auto Co., Main and Winter Sts.
Waterville, The Waterville Motor Co., 245-247 Main St.

MARYLAND.

Baltimore, Auto Storage & Repair Co., 1118 Cathedral St.
Baltimore, Balto. Motor Car Co., 327 N. Calvert St.
Baltimore, A. S. Brown, Mt. Royal Ave.
Baltimore, Chas. I. Wiegand, 840 No. Fulton Av.
Cumberland, The W. W. Garage & Machine Co., No. Center St.

MASSACHUSETTS.

Boston, Adams-Dutton Motor Car Co.
Boston, The Boston Mechanical Co., Motor Mart.
Boston, Boston Tire and Rubber Co., 184 Friend St.
Boston, F. L. Bradley, 624 Columbus Ave., Dorchester.
Boston, E. S. Breed, Buftum.
Boston, Park Square Auto Station, 43 Columbus Ave.
Brockton, Geo. J. Donahue, 389 Warren Ave., Telephone 92. Charging and accessories.
Fall River, John Williams, 464 Pleasant St.
Gloucester, W. Hodgkins, 9 Western Ave.
Lynn, Y. C. Der Bar, Broad St.
Newton Centre, J. W. Crowell, Commonwealth Ave. Tel. 444 Newton West.
Northfield, N. W. Keet.
Pittsfield, Berkshire Automobile Co.

Pittsfield, Central Automobile Station Co., Renne Ave. & Pearl St. Telephone 161-11.
Stockbridge, H. B. Parsons.
Taunton, Brownell & Burt.
Waltham, Watch City Auto Co., Music Hall Ave.
Worcester, Worcester Auto Co., 30 Exchange St.

MICHIGAN.

Bay City, Mobile Motor and Machine Co.
Coldwater, V. L. Pendleton & Co.
Detroit, Berg & Brehmer, 238 Jefferson Ave.
Detroit, Detroit Automobile Top Co., 265 Jefferson Ave.
Detroit, The Free Bock Auto Co.
Detroit, Wayne Auto & Supply Co.
Flint, Samuel Wey, No. Saginaw St.
Grand Rapids, Lubeck Automobile Co.
Lansing, John Bohner, 117 Lenawee St., E.
Saginaw, Morris Auto Co., Tilden St. and Genesee Ave.

MINNESOTA.

Minneapolis, Adland Storage & Auto Co., 240 7th Ave. South.
Minneapolis, C. D. Velle, 225 Clinton St.
St. Paul, Bird Burney Auto Co., Washington and 5th Sts.
Winona, Adams Automobile Co.

MISSISSIPPI.

New Orleans, Crescent City Automobile Co., South Rampart St.

MISSOURI.

Kansas City, E. P. Moriarity & Co., 1000 Grand Ave.
Kansas City, Day Auto Co., 1407 S. 12th St.
St. Louis, Olive Auto Co., 3970 Olive St.
St. Louis, The Union Garage, 4603 Olive St.
St. Louis, Colonial Automobile Co., 3944-3950 Olive St.

NEBRASKA.

Lincoln, The Wittman Co., 205 S. 11th St.

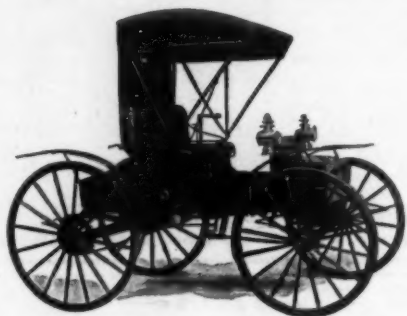
NEW HAMPSHIRE.

Manchester, Brodie Elec. Co., 42 Pleasant St.

NEW JERSEY.

Asbury Park, C. R. Zacharias.
Atlantic City, Atlantic Automobile Co.
Atlantic City, Columbia Automobile Station.
Bloomfield, Albert Leppacker, Glenwood Ave. and Henry St.
Camden, Reeves Auto Station, 7th and Market Sts.
East Orange, Hollywood Motor Car Co., Opposite Grove St. Sta.
Elizabeth, Elizabeth Auto Co., 14 Westfield Ave.
Englewood, J. W. Van Wart, Palisade Ave.
Freehold, Hotel American.
Hackensack, Hackensack Auto Co.
Jersey City, Crescent Cycle & Automobile Co., 2565 Hudson Bl'vd.
Jersey City, S. W. J. Kells Mfg. Co., 130 Highland Ave.
Long Branch, W. H. Parker & Co., 148 B'way.
Montclair, Montclair Auto Station Co., Valley Road.
Newark, Newark Garage & Repair Co., Clinton Ave. and Somerset St.
Newark, F. E. Boland Motor Co., 239 Halsey St.
Newark, Coburn & Beldon, 577 Central Ave.
Newark, Astor Garage, 56 Sherman Ave.
Newark, Riverside Garage, 129 Riverside Ave.
Newark, Motor Vehicle Co., 518 Broad St.
Newark, New Jersey Auto Car Co., 256 Halsey St.
Newark, Austin Auto Co., 484 Broad St.
Newark, Forest Hill Auto Co.
Orange, Orange Automobile Garage.
Passaic, Passaic Motor Car Co., 147-151 Main Av.
Paterson, Brown & Schmidt, 199 Paterson St.

Do You Want a Practical Motor Car?



Runabout \$600, Top and Lamps Included.

One that you can drive anywhere that you would a horse and buggy, and which is of low first cost and low up-keep? If so,

The Reliable Dayton

here illustrated, merits your attention. Full descriptive catalog on request.

Unoccupied Territory Open to Aggressive Agents

The Reliable Dayton Motor Car Co.
Dept. II, 375 West Lake Street, Chicago, Ill., U. S. A.



The
Only
Practical
Shock
Absorber
on the
Market

THE DIEZEMANN

It is self-lubricating, needs no regulation after being once properly adjusted and its frictional surfaces are dirt and dust proof.

DIEZEMANN SHOCK ABSORBER CO.

1308 Hudson St., Hoboken, N. J.

GARAGE AND REPAIR STATIONS—Continued

NEW YORK.

Albany, Albancy Exchange, Storage and Repairing, State and Larke Sts.
Albany, Ernest A. Norris, 335 Central Ave.
Amsterdam, J. L. Peck.
Ballston Springs, Tracy, Nicholl Auto Garage.
Bath, Frank Klieckler.
Buffalo, Auto-Car Garage, 77 Edward St., Near Delaware Ave.
Buffalo, Kelsey Co., 42 Niagara St.
Buffalo, Motor Vehicle Garage Co., 1133-1137 Main St.
Buffalo, C. R. Baine, 1525 Seneca St.
Elmira, H. C. Goarser, 122 R. R. Ave.
Ithaca, Fairbanks, Grant Mfg. Co., 109 Albany St.
Middletown, C. L. Swezy, 28 James St.
New Rochelle, Deselbrow Motor Car Co.
New York City, American Automobile Storage Co., 36-38-40 W. 60th St.
New York City, Cryder & Co., Storage and Repairs, 63d St. & Park Ave.
New York City, American Locomotive Auto Co., B'way and 57th St.
New York City, Archer & Co., 231-233-235 W. 40th St.
New York City, The Autocar, 2181 B'way.
New York City, The Auto Mart, 501 7th Ave.
New York City, Bouton Motor Co., 110 W. 41st St.
New York City, Sidney B. Bowman Auto Co., 52 W. 43d St.
New York City, B'way Automobile Exchange, 515 7th Ave.
New York City, Columbus Auto Exchange & Stor., Co., 313 W. 52d St.
New York City, Hol Tan Co., B'way & 56th St.
New York City, Harry S. Houpt, 731 7th Ave.
New York City, Locomobile Co. of America, B'way and 76th St.
New York City, Majestic Automobile Co., 1709 B'way.
New York City, Mt. Morris Auto Garage, 27 W. 124th St.
New York City, Panhard & Levasse Auto Co., B'way and 62nd St.
New York City, Tuxedo Garage Co., 33-39 E. 48th St.
New York City, Victor Auto Storage Co., 147 W. 45th St.
New York City, White Sewing Machine Co., 42 W. 42nd St.
New York City, Winton Motor Carriage Co., 1706 B'way.
Poughkeepsie, John Van Brunschoten, Catherine St.

Rochester, Fred A. Mabbett, 189 Main St., West.
Saratoga Springs, Hodges Auto Garage.
Saratoga Springs, Ketchum's Auto Garage.
Syracuse, The Amos Pierce Auto Co., 109-113 So. State St.
Utica, Utica Motor Car Co., Harry P. Mundy.

NORTH CAROLINA.

Charlotte, L. Barringer, 10 N. Church St.

OHIO.

Akron, Union Automobile Garage Co., South College St.
Akron, Akron Auto Garage Co., 9 W. Buchtel Ave.
Cleveland, Geo. A. Crane & Co., 40 Clara St.
Cleveland, H. S. Moore, 160 Crawford Rd.
Cincinnati, Gunther Bros. Co., 1633 Madison B'v'd.
Cincinnati, Queen City Auto Co., 810 Race St.
Columbus, Capitol City Auto Co., 691 High St.
Dayton, Chas. E. Drury, Miami Motor Co.
Dayton, Kiser & Co., 29 E. 2nd St.
Toledo, Toledo Motor Carriage Co., 1012 Madison St.
Youngstown, A. E. Brown, 134 E. Federal St.

OREGON.

Portland, Ballou & Wright, 86 Sixth St.

PENNSYLVANIA.

Allentown, Harry A. Smith, Church & Court Sts.
Allentown, O. J. Dietrich, N. 10th St.
Allegheny, Allegheny Auto Co., 711 Jackson St.
Ambler, D. E. Johnson.
Dalton, Kellogg, Mosier & Co.
Doylestown, John J. Donnelly.
Easton, E. F. Crane, Holland Garage, 200 South 3rd St.
E. Downingtown, Griffith & Wollerton.
Erie, Bay State Machine Co., 121 Peach St.
Harrisburg, Central Penn. Auto Co., Market St.
Lancaster, Safety Buggy Co., Elizabeth and Plum Aves.
McKeesport, Sam'l Leek, 9th Ave. and Mulberry.
Overbrook, Henry Mackeller.
Philadelphia, Regent Garage, 220 South 40th St.
West Philadelphia.
Philadelphia, Eastern Automobile Co., Broad below Callowhill.
Philadelphia, Bellevue Stratford Garage.

Philadelphia, 51st St. Auto Station, 51st St. and Beaumont Ave.
Philadelphia, D. L. Mulford, 1801 N. 21st St.
Pittsburg, A. Engle, 1103 Carson St., S. Side.
Pittsburg, East Liberty Auto Co., 5969 Centre Ave.
Pittsburg, H. S. Townsley, 323 Homeward Ave.
Pittsburg, Hiland Garage, Beatty and Baum Sts.
Pittsburg, Standard Automobile Co., 5917 Baum St.
Pottstown, D. G. Good.
Reading, E. S. Youse.
Stroudsburg, G. H. Schroeder.
Wilkes-Barre, Wilkes-Barre Auto Co., 23 N. Franklin St.
Wilkes-Barre, Auto Machine & Repair Co., 35 N. Washington St.
Williamsport, Williamsport Automobile Exchange, West Third St.
York, J. A. Walker.

RHODE ISLAND.

Narragansett Pier, Church & Caswell.
Newport, N. Y. Auto Repository, Ocean House Stables.
Newport, J. D. Dickson, 113 Bellevue Ave.
Providence, Philip Shaw, Reservoir Ave.

TENNESSEE.

Chattanooga, Sid Black Automobile Co.
Nashville, Anderson Auto Co., 314 4th Ave. N.
Nashville, B. T. Bell, 166 3d Ave. N.

UTAH.

Ogden, Ogden Automobile Co., Twenty-fourth St.

VERMONT.

Rutland, Clark & Mathews, 161 West St.
White River Junction, Excelsior Carriage Co.

WISCONSIN.

Milwaukee, C. G. Norton & Co., 459 B'way.
Milwaukee, Hein & Casper, 591 B'way.
Milwaukee, Welch-Estberg Co., Seventh and Grand Ave.

DOMINION OF CANADA.

Montreal, Dominion Motor Car Co.
Quebec, Quebec Auto and Launch Co.
Winnipeg, McCulloch & Boswell, 189 Lombard St.
Winnipeg, Jns. Maw & Co., 280 William St.

Insure Your Motor

Against Wear and Carbon Troubles by Using

INVADER OIL

— The Oil That Graphitizes —

Manufactured only by

CHAS. F. KELLUM & COMPANY, 128 Arch Street, Philadelphia

Grades to
Meet all Re-
quirements

YOU NAME
THE CAR

WE'LL NAME
THE GRADE

MOTORIZING

in the Old Country 'specially Scotland

The Motor World

is Smart, Up to Date and Profusely Illustrated

Chronicles Every Movement

in the Trade and Sport. To be well informed on progress in Scotland, England and Ireland read The Motor World

Annual Subscription \$2.00

HAY, NISBET & CO., Limited

73 Dunlop Street,

GLASGOW, SCOTLAND

"Keep your eye on Continentals!"

Continental TIRES

Standard all over the world

Continental Caoutchouc Co.

J. M. GILBERT, General Manager

Representation
Everywhere

43 Warren Street
NEW YORK

BUYERS' FINDING LIST

AMMETERS.

Eldredge Electric Co., 3 Post Office Sq., Springfield, Mass.

AUTOMOBILE COVERS.

Snutzel Auto Supply Co., 1534 Broadway, New York City.
Springfield Auto Top and Upholstering Co., 102-106 Dwight St., Springfield, Mass.

BASKETS.

Snutzel Auto Supply Co., 1534 Broadway, New York City.

BRAZING COMPOUNDS.

Snutzel Auto Supply Co., 1534 Broadway, New York City.

CARBIDE.

Jos. Dixon Crucible Co., Jersey City, N. J.

CEMENTS.

Young, O. W., 174-180 Frelingheusen Ave., Newark, N. J.

CHAINS (AUTOMOBILE).

Snutzel Auto Supply Co., 1534 Broadway, New York City.

CYLINDER OILS.

Young, O. W., 174-180 Frelingheusen Ave., Newark, N. J.

GOGGLES AND MASKS.

Snutzel Auto Supply Co., 1534 Broadway, New York City.

GRAPHITE.

Jos. Dixon Crucible Co., Jersey City, N. J.

GREASES.

Rubay, Leon, 140 W. 38th St., New York City.
Vacuum Oil Co., 29 Broadway, New York City.

HORNS (AUTOMOBILE).

Rubay, Leon, 140 W. 38th St., New York City.
Snutzel Auto Supply Co., 1534 Broadway, New York City.

IGNITION BATTERIES.

Rubay, Leon, 140 W. 38th St., New York City.
Snutzel Auto Supply Co., 1534 Broadway, New York City.

IMPORTERS (AUTO GOODS).

Rubay, Leon, 140 W. 38th St., New York City.
Snutzel Auto Supply Co., 1534 Broadway, New York City.

JACKS.

Hardy, R. E., Co. (The), 86 Watts Street, New York City.

LAMPS (AUTOMOBILE).

Badger Brass Mfg. Co. (The), Kenosha, Wis.
"Solar."
Boesch Lamp Co., 1569 Grove St., San Francisco, Cal.
Dietz, R. E., Co., 66 Laight St., New York City.
Elbridge Electrical Mfg. Co., Elbridge, N. Y.
Snutzel Auto Supply Co., 1534 Broadway, New York City.

ODOMETERS.

Jones, Jos. W., 127 W. 32d St., New York City
("Jones").
Smith, R. H., Mfg. Co., Springfield, Mass. (Combined Speedometer and Odometer).
Warner Instrument Co. (Auto-Meter), Beloit, Wis.

OIL.

Vacuum Oil Co., 29 Broadway, New York City.
Young, O. W., 174-180 Frelingheusen Ave., Newark, N. J.

RAIN APRONS.

Springfield Auto Top and Upholstering Co., 102-106 Dwight St., Springfield, Mass.

SHOCK ABSORBERS AND AUXILIARY

SPRINGS.

Diezemann Shock Absorber Co., 1311 Hudson St., Hoboken, N. J.

SPARK COILS.

Hardy, R. E., Co. (The), 86 Watts Street, New York City.
Pittsfield Spark Coil Co., Pittsfield, Mass.
Rubay, Leon, 140 W. 38th St., New York City (Lacoste).
Snutzel Auto Supply Co., 1534 Broadway, New York City.

SPARK PLUGS.

Hardy, R. E., Co. (The), 86 Watts Street, New York City.
Pittsfield Spark Coil Co., Pittsfield, Mass.
"Jewell."
Rubay, Leon, 140 W. 38th St., New York City.
Snutzel Auto Supply Co., 1534 Broadway, New York City.

SPEED INDICATORS.

Jones, Jos. W., 127 W. 32d St., New York City
"Jones" (Auto, Boat and Cycle).
Rubay, Leon, 140 W. 38th St., New York City.
Smith, R. H., Mfg. Co., Springfield, Mass.
(Also Speedometer and Odometer Combined).
Warner Instrument Co. (Auto-Meter), Beloit, Wis.

TIRES (AUTOMOBILE).

Broadway Rubber Tire Co., 253 W. 47th St., New York City.

Rubay, Leon, 140 W. 38th St., New York City.

TIRE ADJUSTERS.

Long & Mann Co., 520 Central Bldg., Rochester, N. Y.

TIRE REPAIR KITS (AUTOMOBILE).

Continental Caoutchouc Co., 43 Warren St., New York City.

TOPS (AUTOMOBILE).

Springfield Auto Top and Upholstering Co., 102-106 Dwight St., Springfield, Mass.

COMPLETE LISTS

Auto Owners' Garages

DEALERS, JOBBERS AND MANUFACTURERS

New Names. Daily. Weekly or Monthly

MOTOR DIRECTORIES CO., Incorporated Successors to Auto Directories Co. 108 Fulton St., New York City Phone 497 John



CARTERCAR "THE CAR AHEAD"



No gears to strip, no clutch to slip, will hold on any hill.



Catalogue free.

MOTORCAR CO. DETROIT, MICH.

The Carter patented system of friction transmission used in these cars is guaranteed the simplest, most durable and powerful in use. One lever controls all speeds forward and back. Three years in actual use.

In answering advertisements please mention AUTOMOBILE MAGAZINE.

BOOKS FREE

WITH

American Industries

(THE MANUFACTURER'S PAPER)



THE National Association of Manufacturers has made arrangements with the authors and publishers of three of the best books recently written for business men, by which it is able to offer any of these books free with a yearly subscription to AMERICAN INDUSTRIES, the organ of the Association.

The books are the following:

A Traveller in South America, by F. B. Wiborg, of Ault & Wiborg, printing ink manufacturers.

Why a Boy Should Learn a Trade, by Peter M. Kling, Pittsburg manufacturer and capitalist.

The Metric Fallacy, by Frederick A. Halsey and Samuel S. Dale.

¶ Probably you may know American Industries. The paper in 1907 will be far more interesting than it has ever been before, with---especially---a wealth of matter relating to the entire Foreign Trade proposition, embracing articles in every number, on this important subject.

¶ The offer is a simple one. Send two dollars for a year's subscription to American Industries with the name of the book you wish. The book and the paper will be sent to you for the price of the paper alone. Address:

AMERICAN INDUSTRIES

820 MAIDEN LANE BUILDING ♀ ♀ NEW YORK

"THE OLD **DIETZ MOTOR LAMPS** RELIABLE"



DIETZ
STERLING

DIETZ STERLING
An admirable equipment for Limousines and
Landaulets.

OUR LEADING STYLES
FOR 1907 MADE ON OUR
ORIGINAL **COLD BLAST**
CONSTRUCTION. GUAR-
ANTEED TO STAY
LIGHTED AND GIVE THE
MAXIMUM ILLUMINA-
TION. THEY HAVE THE
EXPERIENCE OF 67
YEARS OF LAMP BUILD-
ING BEHIND THEM.
WRITE FOR COMPLETE
1907 CATALOGUE.

See Our Exhibit, Spaces 161 and 162,
Mechanics Bldg., Boston, Mass.



DIETZ
ROYAL

DIETZ ROYAL
Particularly adapted for use on Heavy Cars.

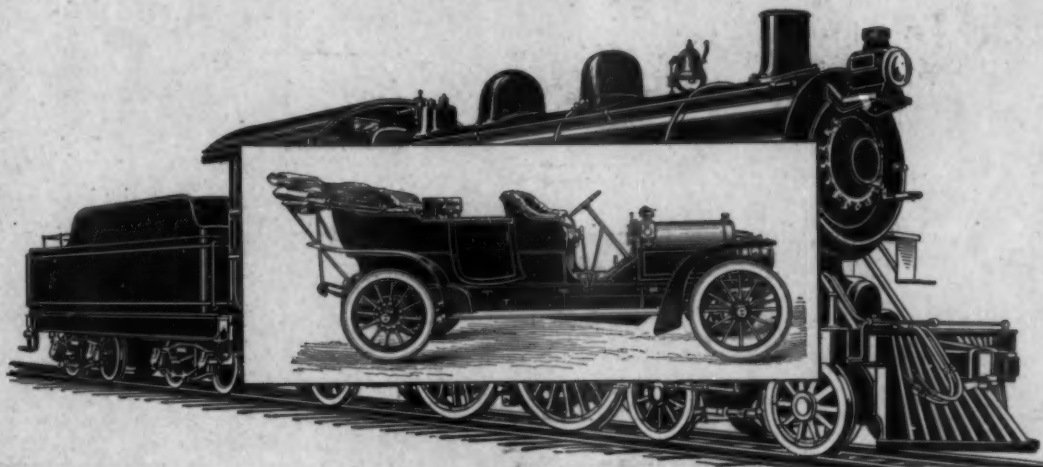
R. E. DIETZ COMPANY

60 Laight Street

Largest Makers of Lanterns in the World
ESTABLISHED 1840

NEW YORK, U. S. A.

AMERICAN LOCOMOTIVE MOTOR CAR



1886 BROADWAY, NEW YORK.

WALDEN W. SHAW, General Agent,
1532 Michigan Avenue, Chicago, Ill.
H. OSCAR BROWN, Agent,
229 North Broad Street, Philadelphia, Pa.
C. F. WHITNEY, Agent,
Care of Park Square Auto Station, 43 Columbus
Avenue, Boston, Mass.

Vol. X. No. 4

APRIL, 1907

AUTOMOBILE MAGAZINE

Published by THE AUTOMOBILE PRESS
ANGUS SINCLAIR, Editor
136 Liberty Street, New York

MONTHLY
Price, 10 Cents



Member American Motor Car Manufacturers' Association.

"ST. LOUIS" MOTOR CARS

THE WORLD'S BEST MODEL 18

NOW OFFERED BY AMERICA'S
PIONEER MOTOR MFRS. FOR 1907



HE most refined and elegant
machine to be had. Very
simple 35 H. P. 4 cylinder
Motor with every

known improvement. Quiet in operation,

very speedy, shaft drive, integral construction, three point suspension, graceful lines and finished most artistically. What more could you ask? Catalogs free.

ST. LOUIS MOTOR CAR CO.
PEORIA, ILLS.